COMMONWEALTH OF PENNSYLVANIA.

DEPARTMENT OF AGRICULTURE,

DIVISION OF FEEDING STUFFS CONTROL.

BULLETIN No. 167.

COMMERCIAL FEEDING STUFFS

OF

PENNSYLVANIA,

IN

1907.

BY

F. D. FULLER,

Chief Chemist.

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LETTER OF TRANSMITTAL.

DEPARTMENT OF AGRICULTURE,

DIVISION OF FEEDING STUFFS CONTROL.

Harrisburg, Pa., Dec. 31, 1907.

Hon N. B. Critchfield,
Secretary of Agriculture,
Harrisburg, Pa.

My dear Sir: I have the honor to transmit herewith a report showing the results of the chemical and microscopical work performed by this Division in the examination of samples of commercial feeding stuffs collected in the open markets of the State during 1907.

In this report is included such additional information as circumstances advise.

Very respectfully,

F. D. FULLER,
Chief Chemist.

BULLETIN No. 167.

Commercial Feeding Stuffs
OF
PENNSYLVANIA,
IN
1907.

By F. D. FULLER.

SUMMARY.

During the year 1907, 108 towns and cities in Pennsylvania, in 29 counties of the Commonwealth, were visited by Special Agents of the Department of Agriculture, and 560 samples of feeding stuffs were collected and sent under seal to the Chief Chemist. Of the 560 samples collected, 498 were examined chemically and microscopically. Fifty-eight samples contained less protein than guaranteed by the manufacturers, and 37 samples were deficient in fat. Eleven samples of cottonseed meal were examined and only three could be called "choice" and one of these carried only 41 per cent. of crude protein. Practically all of the molasses feeds found upon the market, contained a large proportion of weed seeds and many of them were adulterated with rice hulls. Money which was formerly spent in purchasing low grade oat feeds is apparently being put into feeding stuffs of standard quality, and, therefore, we do not find as much oat feed in Pennsylvania as in former years.

The objects of the Feeding Stuff Law are to require all feeding stuffs coming within its provisions, to be properly branded, giving the desired information to the purchaser; to protect the consumer against low grade and adulterated articles; to protect the manufacturer and dealer against dishonest competition and to assist in promoting a more intelligent use of feeding stuffs.

INTRODUCTION.

The following is a report of the work performed by the Department of Agriculture, in the examination of commercial feeding stuffs found in the markets of Pennsylvania, during the year ending December 31, 1907.

The importance of various laws regulating the manufacture and sale of certain commodities cannot be too strongly emphasized. This work has been in progress in this country for many years. Some time ago, Germany formulated a law providing for the examination of the various brands of fertilizer found on the markets, affixing penalties for the violation of the same, due to adulteration or misbranding. This line of work was soon undertaken in Connecticut and in many other states of the Union, so that, at the present time, we find on the statute books of many states, laws regulating the sale of fertilizers, commercial feeding stuffs, Paris green, linseed oil and other commodities. As a result of the close competition between manufacturers and the more complete utilization of by-products, we find on the market, a large number of cheap articles sold as food for domestic animals, which are either adulterated goods, or compounded feeds containing a large percentage of low grade material.

An act of the General Assembly of Pennsylvania was approved by the Governor on April 25, 1901, and required that the sale of practically all feeds, with but few exceptions, should be accompanied by a printed statement, certifying the number of net pounds in the package, the brand name, name and address of manufacturer or jobber, and also a statement of the percentages of crude fat and crude protein which the material contains. Owing to the fact that this law was rigidly enforced by this Department, especially during the years 1905-'06, the quality of many of the feeding stuffs on the market became greatly improved. Correct guarantees were more frequent, and materials which heretofore had been sold without guarantees, were properly labeled according to the provisions of the law.

Notwithstanding the fact that the 1901 act was of great benefit to the agricultural class and manufacturers producing an honest article, there seemed to be a demand for a new law which would give more relief from adulterated goods and inferior articles, selling at prices far in excess of their real value. In response to the demand referred to, the present feeding stuff act, formulated through the co-operation of representatives of various organizations interested, was approved by the Governor on May 28, 1907, and became operative August 1. Under the provisions of this act, pure wheat and rye by-products can be legally sold in Pennsylvania without any statement of analysis, but should be sold as pure wheat or rye bran, pure wheat or rye middlings, or a mixture of any two or more of these articles, as the case may be. Therefore, a simple statement concerning the purity of these articles, is all that is required under the act. Mixed feeds, other than mixtures of wheat and rye by-products, cannot be legally sold in this State at the present time, unless the purchaser knows of what ingredients it is compounded. If any false statement concerning the composition, is placed on the package, it is malicious in the sight of the law and worthy of condemnation. A mixed feed composed of wheat bran and ground corn cob, must, in the future, be sold for just what it is. The present feeding stuff law also requires that a maximum guarantee for crude fiber, in addition to the protein and fat guarantees, shall be attached to all packages containing feeding stuffs subject to the law. The sale of condimental stock and poultry foods, and patented, proprietary or trademarked stock and poultry foods, possessing nutritive value combined with medicinal properties, is also made subject to legal control. Great claims are made as to the nutritive value of many of these articles, and, therefore, should be subject to the same examination which is given to other food materials. Material, however, sold as "stock tonic," "condition powder" or "regulator," for which no nutritive value is claimed, can be legally sold in this State, regardless of the Feeding Stuff Act. A number of manufacturers of "stock foods," "poultry foods," etc., have changed their labels, so as to avoid possible conflict with this act and, at the same time, they took steps to have their customers close out as rapidly as possible all goods they had on hand, prior to the time when said act became effective.

The examination of condimental stock and poultry foods, will not be taken up until about the first of June, 1908, inasmuch as the examination of commercial feeding stuffs, of which large quantities are daily consumed by the stock feeders of Pennsylvania, will consume practically all of the time until that date. In the meantime, all manufacturers of such goods, now being sold in Pennsylvania, will have opportunity to either close them out or change their labels so as to make them comply with the law.

Incorporated in this Bulletin, will be found the analytical data obtained in the examination of samples of feeding stuffs, secured in the open markets of Pennsylvania, during 1907, together with such additional information as circumstances advise.

A complete copy of the Pennsylvania feeding stuffs law is appended for the benefit of those who are especially interested.

OBJECTS OF THE LAW.

1. To require all feeding stuffs coming within the provisions of the law, to have the following information either printed upon the package, or on a tag attached thereto, namely: Net weight, name of brand, name and address of manufacturer or importer, the minimum guaranteed percentages of crude protein and crude fat, the maximum guaranteed percentage of crude fiber, and in case of mixed feeds, other than mixtures of wheat and rye by-products, the names of the several ingredients of which the contents of the package is composed.
2. To protect the stock feeder of the State against low grade and sophisticated articles.
3. To protect the manufacturer and dealer against dishonest competition.
4. To assist in promoting a more intelligent use of feeding stuffs.

ANALYSES OF SAMPLES SENT IN BY MANUFACTURERS AND PURCHASERS OF THE SAME, LOCATED IN PENNSYLVANIA.

According to Section 1 of the Feeding Stuff Law of 1907, manufacturers or purchasers of feeding stuffs, located within the State of Pennsylvania, may send samples of the same to this Department for analysis, and for a fee of $1.00 per sample, the sender may be informed of the amounts of crude protein, crude fat and crude fiber which the material contains. All moneys so received are covered into the State Treasury.

This Act became operative August 1, 1907, and between that date and January 1, 1908, two hundred and seventy-six samples were received for analysis, according to this provision. The following table gives the name of feeding stuff, the party from whom it was received and the percentages of crude protein, crude fat and crude fiber, as reported by the Chief Chemist.

TABLE I.—ANALYSES OF SAMPLES RECEIVED FROM MANUFACTURERS AND PURCHASERS OF THE SAME, RESIDING IN PENNSYLVANIA.

Chief Chemist's number.	Name of Feeding Stuff.	Received from	Crude protein.	Crude fat.	Crude fiber.
			Per ct.	Per ct.	Per ct.
F. 6,..	Bran,	A. C. Godshall & Co., Lansdale,	15.38	4.28	7.19
F. 7,..	Poultry Food,	H. E. Hawk's Son, Easton,	15.50	4.80	5.72
F. 8,..	No. 1 Chick Feed,	Lancaster Poultry Food Co., Lancaster,	9.56	3.45	3.51
F. 9,..	No. 2 Chick Feed,	Lancaster Poultry Food Co., Lancaster,	9.81	3.68	3.72
F. 10,.	Poultry Food,	Lancaster Poultry Food Co., Lancaster,	10.31	3.60	4.23
F. 11,.	Wheat Middlings,	J. A. Eichman, Globe Mills,	17.75	5.03	5.19
F. 12,.	Mixed Chop,	Pittston Milling Co., Pittston,	8.81	3.28	6.76
F. 13,.	No. 1 Chop,	Pittston Milling Co., Pittston,	10.44	4.10	2.86
F. 14,.	Wheat Bran,	Pittston Milling Co., Pittston,	15.56	5.48	9.97
F. 15,.	Standard Middlings,	Pittston Milling Co., Pittston,	17.50	5.78	8.22
F. 16,.	Chick Feed,	Pittston Milling Co., Pittston,	10.00	2.93	3.23
F. 17,.	No. 1,	C. H. McMahon, Pottsgrove,	25.13	8.38	10.11
F. 18,.	No. 2,	C. H. McMahon. Pottsgrove,	15.63	8.55	6.00
F. 19,.	No. 3,	C. H. McMahon, Pottsgrove,	20.69	8.18	9.66
F. 20,.	Middlings, No. 4,	J. A. Allen, Alderson,	14.06	7.03	6.28
F. 21,.	Mixed Chop, No. 5,	J. A. Allen, Alderson,	11.44	4.13	6.24
F. 22,.	Mixed Chop, No. 6,	J. A. Allen, Alderson,	10.19	4.51	5.20
F. 23,.	Chick Feed,	Hunter & Son, Ashland,	11.00	4.65	3.58
F. 24,.	Hen Food,	Hunter & Son, Ashland,	10.63	3.20	3.26
F. 25,.	Bran,	Wagner & Emrich, Womelsdorf,.	15.44	4.34	6.87
F. 26,.	Middlings,	Wagner & Emrich, Womelsdorf,.	13.31	2.65	1.50
F. 27,.	Corn Chop,	Wagner & Emrich, Womelsdorf,.	8.88	4.15	1.61
F. 28,.	Poultry Grains,	Dayton Milling Co., Towanda,..	10.63	3.65	2.92
F. 29,.	Chick Food,	Dayton Milling Co., Towanda,..	10.94	4.93	2.52
F. 30,.	Mixed Chop,	Dayton Milling Co., Towanda,..	8.50	3.75	5.89
F. 31,.	Hen Food,	I. S. Fry, Reading,	11.00	3.35	3.47
F. 32,.	Simpson's Chick Feed,	Simpson Grain and Food Co., Norristown,	13.19	4.45	3.42
F. 33,.	Elevator Cleanings,	H. N. Bean, Philadelphia,	9.19	3.33	21.62
F. 34,.	Wheat Middlings,	Manbeck & Nelson, Mifflin,	15.44	3.90	3.47
F. 35,.	Wheat Bran,	Manbeck & Nelson, Mifflin,	15.94	4.43	8.57
F. 36,.	Corn and Oats Chop,	Manbeck & Nelson, Mifflin,	9.81	4.05	2.99
F. 37,.	Chop,	Eulalia Mlg. Co., Coudersport,..	9.69	4.48	5.37
F. 38,.	Horse Chop,	G. W. Moore, Moore,	9.75	3.73	10.59
F. 39,.	Cow Chop,	G. W. Moore, Moore,	9.13	3.15	10.27
F. 40,.	Wheat Middlings,	Mercer Milling Co., Mercer,	15.00	4.40	4.62
F. 41,.	Bran and Middlings,	Mercer Milling Co., Mercer,	14.56	4.73	5.79
F. 42,.	Corn and Oats Chop,	Mercer Milling Co., Mercer,	9.56	4.35	4.34
F. 43,.	Wheat Bran,	Mercer Milling Co., Mercer,	14.06	5.35	8.39
F. 44,.	Middlings,	Hanover Produce Co., New Oxford,	16.50	5.22	6.46
F. 45,.	Wheat Bran,	Blank & Gottshall, Sunbury,	16.13	4.63	7.60
F. 46,.	Wheat Middlings,	Blank & Gottshall, Sunbury,	18.00	5.03	4.68
F. 47,.	Rye Middlings and Bran,	C. B. Frankenfield, Wm. Penn,.	13.44	2.38	2.78
F. 48,.	Corn and Oats,	C. B. Frankenfield, Wm. Penn,.	9.00	4.00	4.74
F. 49,.	Chick Feed,	C. B. Frankenfield, Wm. Penn,.	11,56	4.58	4.08
F. 50,.	Hay and Grain Feed,	C. B. Frankenfield, Wm. Penn,.	10.25	4.20	9.13
F. 51,.	Berg's 3 Medal Poultry Meat,...	The Berg Co., Philadelphia,	61.18	13.32	....
F. 52,.	Dairy Chop,	Eaker & Vermilya, Muncy,	7.19	3.30	12.19
F. 53,.	Wheat Middlings,	Eaker & Vermilya, Muncy,	14.44	3.56	4.82
F. 54,.	Corn and Oats Chop,	Eaker & Vermilya, Muncy,	9.25	4.06	5.45
F. 55,.	Wheat Bran,	Eaker & Vermilya, Muncy,	16.25	4.88	8.39
F. 56,.	Pigeon Food,	E. Dunwoody & Co., Phila.,	12.94	3.72	5.04
F. 57,.	Poultry Food,	E. Dunwoody & Co., Phila.,	10.56	3.56	4.52
F. 58,.	Chick Food,	E. Dunwoody & Co., Phila.,	10.25	2.37	4.19
F. 59,.	Pigeon Food,	Blank & Gottshall, Sunbury,	12.75	4.38	5.22
F. 60,.	Hen Food,	Blank & Gottshall, Sunbury,	10.63	3.39	4.14
F. 61,.	Horse Feed,	Blank & Gottshall, Sunbury,	11.19	4.23	7.04
F. 62,.	Poultry Food,	Dodds & Garrett, Beaver Falls, .	10.63	3.11	6.49
F. 63,.	Alfalfa Horse Feed,	Alfalfa Feed Mills, Philadelphia,	12.88	5.58	11.29
F. 64,.	Chop,	W. H. Long, Howard,	10.06	3.90	9.14
F. 65,.	White Middlings,	Rockwood Milling Co., Rockwood,	10.50	1.19	2.02
F. 66,.	Middlings,	Rockwood Milling Co., Rockwood,	15.81	4.67	4.52
F. 67,.	Bran,	Rockwood Milling Co., Rockwood,	15.38	4.53	8.72
F. 68,.	Buckwheat Feed,	Rockwood Milling Co., Rockwood,	31.00	8.28	13.02
F. 69,.	Oat Feed,	Rockwood Milling Co., Rockwood,	6.44	2.63	24.29

TABLE I.—Continued.

Chief Chemist's number.	Name of Feeding Stuff.	Received from	Crude protein.	Crude fat.	Crude fiber.
			Per ct.	Per ct.	Per ct.
F. 73,	Chick Feed,	Blank & Gottshall, Sunbury,	10.69	3.12	4.04
F. 74,	Horse and Cattle Powder,	McIlvaine & Bro., Philadelphia,	7.38	5.94	6.19
F. 75,	Poultry Powder,	McIlvaine & Bro., Philadelphia,	11.75	10.64	5.02
F. 76,	Mixed Chop,	Eureka Milling Co., Monroeton,	8.38	3.61	5.59
F. 77,	Bran,	Ring Milling Co., Muncy,	16.44	4.26	9.32
F. 78.	Cob, Corn and Oats Chop,	Ring Milling Co., Muncy,	7.81	3.66	9.10
F. 79,	Rye and Oats,	Ring Milling Co., Muncy,	11.25	2.49	3.55
F. 80,	Shelled Corn and Oats Chop,	Ring Milling Co., Muncy,	9.19	3.83	5.16
F. 81,	Cob Chop,	Ring Milling Co., Muncy,	7.69	3.82	6.79
F. 82,	Wheat Shorts,	Ring Milling Co., Muncy,	16.88	4.09	5.22
F. 83,	Bran,	Walters & Savage, Hamburg,	14.88	4.37	7.55
F. 84,	Middlings,	Walters & Savage, Hamburg,	13.63	3.22	3.28
F. 85,	Rye Chop,	Walters & Savage, Hamburg,	11.56	2.14	3.26
F. 86,	Mixed Chop,	Walters & Savage, Hamburg,	9.63	3.92	5.43
F. 87,	No. 1 Mixed Feed,	F. C. Williams, Easton,	10.63	3.34	3.70
F. 88,	No. 2 Mixed Feed,	F. C. Williams, Easton,	9.44	4.11	5.25
F. 89,	Chick Feed,	F. C. Williams, Easton,	10.31	3.64	5.06
F. 90,	Vitality Chick Feed,	F. C. Williams, Easton,	13.19	4.85	9.62
F. 91,	Diamond Feed,	F. C. Williams, Easton,	10.00	3.28	4.98
F. 92,	Unground Gluten,	S. H. Moore, Manoa,	12.94	5.85	4.31
F. 93,	Hominy Chop,	S. H. Moore, Manoa,	10.69	8.20	6.11
F. 94,	Bran,	H. G. Heacock, Orangeville,	13.69	4.50	8.73
F. 95,	Middlings,	H. G. Heacock, Orangeville,	15.50	5.43	4.20
F. 96,	Corn, Ear Chop and Oats,	H. G. Heacock, Orangeville,	7.63	3.75	8.67
F. 97,	Mixed Chop,	H. G. Heacock, Orangeville,	9.63	4.45	3.72
F. 98,	Bran,	C. P. Matthews & Son, Scranton,	14.38	5.31	10.90
F. 99,	White Middlings,	C. P. Matthews & Son, Scranton,	16.75	4.58	3.28
F. 100,	Brown Middlings,	C. P. Matthews & Son, Scranton,	16.00	5.56	8.59
F. 101,	Mixed Feed for Chickens,	C. P. Matthews & Son, Scranton,	9.13	3.19	4.83
F. 102,	Special White Feed,	C. P. Matthews & Son, Scranton,	7.81	4.16	4.24
F. 103,	No. 2 Feed,	C. P. Matthews & Son, Scranton,	8.56	4.23	5.00
F. 104,	Hominy,	C. P. Matthews & Son, Scranton,	8.31	6.07	9.45
F. 105,	White Feed,	C. P. Matthews & Son, Scranton,	9.69	6.46	4.55
F. 106,	Oat Feed,	C. P. Matthews & Son, Scranton,	7.69	3.28	12.49
F. 107,	Screenings,	C. P. Matthews & Son, Scranton,	11.69	3.46	8.25
F. 108,	Best Feed,	C. P. Matthews & Son, Scranton,	8.81	5.17	4.58
F. 109,	Best Feed for Horses,	C. P. Matthews & Son, Scranton,	10.31	4.16	6.07
F. 110,	Best Feed for Cows,	C. P. Matthews & Son, Scranton,	19.69	4.76	7.58
F. 111,	Linseed Meal,	C. P. Matthews & Son, Scranton,	36.44	7.16	8.77
F. 112,	Gluten Meal,	C. P. Matthews & Son, Scranton,	24.38	3.82	7.99
F. 113,	Corn and Oats Chop,	W. H. Carnahan Co., Apollo,	9.25	3.98	4.82
F. 114,	Mixed Feed: Bran and Shorts,	W. H. Carnahan Co., Apollo,	15.06	4.75	7.03
F. 115,	Wheat and Rye Bran,	F. D. Hartzel's Son, Chalfont,	14.69	4.42	8.32
F. 116,	Wheat and Rye Middlings,	F. D. Hartzel's Son, Chalfont,	14.13	3.41	3.94
F. 117,	Winter Wheat Bran,	John Hoffer Flouring Mill Co., Steelton,	15.31	4.89	10.80
F. 118,	Winter Middlings,	John Hoffer Flouring Mill Co., Steelton,	17.75	4.90	4.47
F. 119,	Winter Shorts,	John Hoffer Flouring Mill Co., Steelton,	17.88	5.67	8.91
F. 120,	Mixed Chop,	A. C. Godshall & Co., Lansdale,	12.31	3.45	5.33
F. 121,	Malt Sprouts,	M. F. Baringer, Philadelphia,	25.25	2.40	14.92
F. 122,	Horse and Cattle Powder,	John Stouffer, Mifflintown,	15.51	5.17	9.44
F. 123,	Poultry Powder,	John Stouffer, Mifflintown,	16.48	3.33	8.76
F. 124,	Ground Feed No. 1,	Spanogle & Yeager, Lewistown,	9.75	4.48	3.51
F. 125,	Ground Feed No. 2,	Spanogle & Yeager, Lewistown,	11.88	5.01	4.85
F. 126,	Mixed Chop,	R. A. Smith, Siegfried,	11.88	4.12	4.28
F. 127,	Horse Chop,	R. A. Smith, Siegfried,	11.06	2.82	3.70
F. 128,	Corn Meal,	C. P. Matthews & Son, Scranton,	8.50	4.22	1.75
F. 129,	Cedar Rapids Gluten Feed,	C. W. Wagar & Co., Phila.,	21.88	3.70	5.17
F. 130,	Keokuk Gluten Feed,	C. W. Wagar & Co., Phila.,	24.19	3.62	7.73
F. 131,	Union Gluten Feed,	C. W. Wagar & Co., Phila.,	18.88	6.18	8.00
F. 132,	Clinton Gluten Feed,	C. W. Wagar & Co., Phila.,	17.81	3.66	8.03
F. 133,	Piel Brothers' Gluten Feed,	C. W. Wagar & Co., Phila.,	21.56	3.89	7.32
F. 134,	Bran, containing Rye,	Adam Stoudt, Shoemakersville,	15.94	4.80	7.88
F. 135,	Middlings, containing Rye,	Adam Stoudt, Shoemakersville,	13.00	2.62	2.01
F. 136,	Corn Meal,	Carbondale Milling Co., Carbondale,	9.06	4.12	2.41
F. 137,	No. 1 Feed,	Carbondale Milling Co., Carbondale,	9.19	4.48	6.82
F. 138,	No. 2 Feed,	Carbondale Milling Co., Carbondale,	10.75	4.42	5.68
F. 139,	Mixed Chop,	Hazleton Mercantile Co., Hazleton,	9.00	6.14	8.55
F. 140,	Bran,	T. W. Barlow, Ft. Washington,	14.44	5.29	14.75

TABLE I.—Continued.

Chief Chemist's number.	Name of Feeding Stuff.	Received from	Crude protein.	Crude fat.	Crude fiber.
			Per ct.	Per ct.	Per ct.
F. 141,	Poultry Feed, ...	Strunk & Moyer, Reading, ...	10.44	4.06	5.48
F. 142,	Pigeon Feed, ...	Strunk & Moyer, Reading, ...	13.25	4.56	5.34
F. 143,	Feed, ...	Bushkill Milling Co., Easton,....	9.13	3.85	6.10
F. 144,	Feed, ...	J. T. Nyhart, Peckville, ...	9.19	6.47	6.94
F. 145,	Feed, ...	Moyer & Son, Souderton, ...	5.56	3.52	16.44
F. 146,	Feed, ...	C. E. Diehl, Everett, ...	8.75	3 .88	7.11
F. 147,	"A" Chop (Corn, Oats, Oat Feed and Rye Midds).	Robbins Milling Co., Wilkes-Barre, ...	8.81	3.86	7.48
F. 148,	"B" Chop (Corn and Oat Feed),	Robbins Milling Co., Wilkes-Barre, ...	8.19	3.80	8.94
F. 149,	No. 1 Feed, ...	Kizer Mill and Elevator Co., Scranton, ...	8.63	3.28	8.03
F. 150,	No. 2 C'k'd Corn Boltings, ...	Kizer Mill and Elevator Co., Scranton, ...	9.06	2.93	2.19
F. 151,	No. 3 Bolted Meal, ...	Kizer Mill and Elevator Co., Scranton, ...	9.06	4.20	2.86
F. 152,	No. 4 Bolted Cracked Corn, ..	Kizer Mill and Elevator Co., Scranton, ...	9.06	3.90	2.29
F. 153,	Chick-a-Dee Food, ...	Elder & Eckbert, Lewistown,....	10.19	4.68	5.62
F. 154,	Mixed Feed, ...	Elder & Eckbert, Lewistown,....	15.00	5.25	6.03
F. 155,	Middlings and Hominy,..........	Elder & Eckbert, Lewistown,....	12.88	6.53	2.87
F. 156,	Poultry Food, ...	Elder & Eckbert, Lewistown,....	11.38	3.25	4.85
F. 157,	No. 1 Chop, ...	Bergin & Co., Nanticoke, ...	11.19	3.60	4.16
F. 158,	No. 2 Chop, ...	Bergin & Co., Nanticoke, ...	8.56	3.93	4.26
F. 159,	Bran, containing Rye, ...	Stroh & Seaman, Hamburg.	15.56	5.12	9.28
F. 160,	Middlings, containing Rye, ...	Stroh & Seaman, Hamburg, ...	15.06	3.81	4.35
F. 161,	Mash Feed, ...	H. L. Davis, Philadelphia, ...	13.75	4.57	5.76
F. 162,	Scratch Feed, ...	H. L. Davis, Philadelphia, ...	10.56	3.53	4.72
F. 163,	Chop, ...	Gibbs Milling Co., Nanticoke,...	10.50	6.86	5.20
F. 164,	No. 1 Stock Feed, ...	The Babcock Co., Scranton, ...	9.25	3.50	5.64
F. 165,	No. 2 Stock Feed,.	The Babcock Co., Scranton,.....	8.56	4.00	5.77
F. 166,	Alfalfa Dairy Feed, ...	Alfalfa Feed Mills, Philadelphia,	18.94	5.83	15.66
F. 167,	Mixed Chop, ...	Millard & Scureman, Kingston..	9.63	4.43	4.26
F. 168,	Alfalfa Feed, ...	E. E. Delp & Co., Philadelphia,.	11.00	3.70	23.46
F. 169,	Pigeon Feed, ...	Askew & Sprecher, Lancaster,...	13.19	4.35	3.82
F. 170,	Corn and Oats Chop, ...	Geo. Walters & Sons, Butler,....	9.38	4.39	4.55
F. 171,	Corn Chop, ...	Geo. Walters & Sons, Butler,....	8.56	3.87	2.51
F. 172,	Wheat Bran, ...	Geo. Walters & Sons, Butler,....	15.00	4.79	8.70
F. 173,	Wheat Middlings, ...	Geo. Walters & Sons, Butler,....	14.13	4.04	5.33
F. 174,	Low Grade Flour, ...	Geo. Walters & Sons, Butler,....	11.25	1.53	0.84
F. 175,	Corn Chop, ...	W. H. Wehr, Allentown, ...	9.44	4.53	1.88
F. 176,	Mixed Chop, ...	W. H. Wehr, Allentown, ...	8.69	2.98	5.21
F. 177,	Wheat Bran, ...	W. H. Wehr, Allentown, ...	15.44	4.56	8.42
F. 178,	Wheat Middlings, ...	W. H. Wehr, Allentown, ...	15.19	3.44	2.71
F. 179,	No. 1 Poultry Feed, ...	Stokes' Seed Store, Phila., ...	12.38	4.20	6.50
F. 180,	No. 2 Poultry Feed, ...	Stokes' Seed Store, Phila., ...	23.94	4.93	8.52
F. 181,	Mixed Chop, ...	Benner & Person, So. Bethlehem,	8.63	3.45	8.39
F. 182,	Poultry Mash, ...	Benner & Person, So. Bethlehem,	13.25	4.26	7.72
F. 183,	Horse Chop, ...	Benner & Person, So. Bethlehem,	10.31	4.21	6.52
F. 184,	Horse Feed, ...	Benner & Person, So. Bethlehem,	10.19	2.50	3.12
F. 185,	Wheat Screenings, ...	J. M. Farrell, Allentown, ...	12.94	5.06	9.28
F. 186,	Mixed Hen Feed, ...	F. E. Farabaugh, Patton.	10.75	2.59	3.93
F. 187,	Mixed Chop, ...	Hower Milling Co., Danielsville,	11.25	1.22	2.20
F. 188,	Bolted Cracked Corn, ...	Carbondale Milling Co., Carbondale, ...	8.75	3.85	2.26
F. 189,	Bu. Ce. Co's Horse Feed, ...	Fred L. Lemont, Philadelphia,..	10.94	4.60	6.85
F. 190,	Chick Food, ...	Sam'l Brubaker & Co., Lancaster, ...	9.44	3.13	3.83
F. 191,	Hen Food, ...	Sam'l Brubaker & Co., Lancaster, ...	8.88	2.70	3.70
F. 192,	Pigeon Food, ...	Sam'l Brubaker & Co., Lancaster, ...	10.50	3.69	3.84
F. 193,	Scratch Food, ...	Sam'l Brubaker & Co., Lancaster, ...	9.31	2.72	3.01
F. 194,	Poultry Meat, ...	Sam'l Brubaker & Co., Lancaster, ...	50.66	33.53	....
F. 195,	Dried Sugar Beet, ...	E. Dallett Hemphill, West Chester, ...	6.22	0.64	9.58
F. 196,	Bran and Middlings, ...	C. J. Greninger, Rauchtown,...	15.06	3.95	6.95
F. 197,	Chop, ...	C. J. Greninger, Rauchtown,...	9.13	3.44	2.97
F. 198,	Middlings, ...	C. J. Greninger, Rauchtown,....	15.00	4.17	3.80
F. 199,	"Bran" (Wheat Bran and 2 per cent. Corn Bran).	C. J. Greninger, Rauchtown, ...	12.88	5.10	9.08
F. 200,	Feed, ...	A. F. Smith, Conyngham, ...	16.88	4.06	8.33
F. 201,	Poultry Feed, ...	J. W. Eshelman, Lancaster,.....	10.88	3.96	6.92

TABLE I.—Continued.

Chief Chemist's number.	Name of Feeding Stuff.	Received from	Crude protein.	Crude fat.	Crude fiber.
			Per ct.	Per ct.	Per ct.
F. 202,	Pigeon Feed,	J. W. Eshleman, Lancaster,	10.75	4.43	3.45
F. 203,	Chick Feed,	J. W. Eshelman, Lancaster,	10.31	3.49	3.90
F. 204,	Corn, Oats and Barley Chop,	H. J. Klingler & Co., Butler,	11.25	4.59	4.76
F. 205,	Buckwheat Middlings,	H. J. Klingler & Co., Butler,	10.38	2.69	18.45
F. 206,	Buckwheat Hulls,	H. J. Klingler & Co., Butler,	4.19	0.80	47.94
F. 207,	Mustard Seed Oil Cake,	The Gorgas-Pierie Mfg. Co., Philadelphia,	33.06	9.25	12.00
F. 208,	Buckwheat Feed,	H. J. Klingler & Co., Butler,	4.88	1.14	46.22
F. 209,	Wyoming Poultry Food,	The Supply Co., Moosic,	31.88	4.74	10.32
F. 210,	Wyoming Stock Food,	The Supply Co., Moosic,	31.56	6.09	11.34
F. 211,	Bran,	C. C. Patterson, Wycombe,	13.75	5.38	10.98
F. 212,	Mixed Chop,	W. H. Dreibelbis & Bro., Shoemakersville,	10.13	3.80	3.22
F. 213,	Corn and Oats Chop,	Emlenton Milling Co., Emlenton,	9.25	4.43	2.51
F. 214,	Bran,	W. H. Dreibelbis & Bro., Shoemakersville,	14.50	3.82	8.38
F. 215,	Middlings,	W. H. Dreibelbis & Bro., Shoemakersville,	14.44	3.26	3.27
F. 216,	Corn Tailings,	D. G. Bamford Milling Co., Midway,	10.38	7.29	3.18
F. 217,	Pure Wheat Bran,	A. W. Luggs & Co., Knoxville,	16.63	5.02	7.40
F. 218,	Pure Wheat Middlings,	A. W. Luggs & Co., Knoxville,	15.44	4.72	4.26
F. 219,	P. & S. Feed,	A. W. Luggs & Co., Knoxville,	7.88	3.58	6.62
F. 220,	Wheat Bran,	M. L. Swab, Sunbury,	11.25	4.71	8.30
F. 221,	Wheat Middlings,	M. L. Swab, Sunbury,	14.50	4.30	4.60
F. 222,	Buckwheat Middlings,	M. L. Swab, Sunbury,	31.06	7.92	3.64
F. 223,	Pure Wheat Bran,	Persing & Cooke, Arters,	15.44	4.63	8.57
F. 224,	Pure Wheat Middlings,	Persing & Cooke, Arters,	16.63	4.81	2.36
F. 225,	Pure Buckwheat Bran,	Persing & Cooke, Arters,	39.06	10.06	3.50
F. 226,	Pure Buckwheat Middlings,	Persing & Cooke, Arters,	24.50	6.51	4.20
F. 227,	Buckwheat Feed,	Eaker & Vermilya, Muncy,	18.06	4.53	22.73
F. 228,	No. 1,	Samuel Raub & Son, Luzerne,	11.06	3.99	3.00
F. 229,	No. 2,	Samuel Raub & Son, Luzerne,	11.75	4.05	3.45
F. 230,	Corn Meal,	Dickson Mill and Grain Co., Scranton,	8.94	4.28	2.40
F. 231,	Cow Feed,	Dickson Mill and Grain Co., Scranton,	17.06	4.09	6.59
F. 232,	Best Feed,	Dickson Mill and Grain Co., Scranton,	10.06	3.53	5.43
F. 233,	Special Feed,	Dickson Mill and Grain Co., Scranton,	13.75	5.01	7.63
F. 234,	Feed,	Dickson Mill and Grain Co., Scranton,	10.19	4.76	8.25
F. 235,	Laymore,	W. A. Gensemer, Philadelphia,	8.75	4.91	2.21
F. 236,	No. 1 Chop,	Wilkes-Barre Milling Co., Wilkes-Barre,	9.44	4.73	3.93
F. 237,	No. 2 Chop,	Wilkes-Barre Milling Co., Wilkes-Barre,	9.88	5.01	4.01
F. 238,	Stock Food,	E. W. Garber, Mt. Joy,	22.50	8.21	5.32
F. 239.	Poultry Powder,	E. W. Garber, Mt. Joy,	10.50	14.54	8.19
F. 240,	Rye Distillers' Grains,	The Large Distilling Co., Pittsburg,	14.94	6.59	14.74
F. 241,	Lee's Egg Maker and Chick Grower,	H. L. Davis, Philadelphia,	38.50	4.01	10.01
F. 242,	International Stock Food,	Sprecher & Ganss, Lancaster,	12.38	3.92	11.93
F. 243,	Bran,	J. N. Herr, Schuyler,	15.44	4.26	9.08
F. 244,	Middlings,	J. N. Herr, Schuyler,	16.31	4.82	4.97
F. 245,	Vigor Scratching Food,	Johnson Seed Co., Philadelphia,	9.56	3.05	3.15
F. 246,	Vigor Egg Food,	Johnson Seed Co., Philadelphia,	22.25	4.62	11.07
F. 247,	Acme Poultry Food,	L. Steingrabe, Mercer,	15.88	1.78	8.14
F. 248,	Acme Stock Food,	L. Steingrabe, Mercer,	19.75	3.57	5.30
F. 249,	Buckwheat Feed,	John Mather, Benton,	24.38	6.10	13.72
F. 250,	Wheat Bran,	S. D. Rohrbach, Topton,	16.00	4.91	8.74
F. 251,	Wheat R. Middlings,	S. D. Rohrbach, Topton,	16.44	5.21	5.55
F. 252,	Wheat W. Middlings,	S. D. Rohrbach, Topton,	14.56	1.52	2.63
F. 253,	Buckwheat Feed,	Dayton Milling Co., Towanda,	19.50	4.55	24.89
F. 254,	Feed,	Woodhouse & Tiel, Scranton,	10.31	6.22	4.11
F. 255,	Frumentum Hominy Feed,	James W. Merritt, Granville Summit,	11.06	9.67	5.87
F. 256,	No. 1 Cattle Powder,	McIlvaine Bros., Philadelphia,	27.75	17.77	11.52
F. 257,	No. 2 Cattle Powder,	McIlvaine Bros., Philadelphia,	21.63	33.44	6.42
F. 258,	Rye Distillers' Grains,	The Highspire Dist. Co., Highspire,	17.94	8.25	13.20

TABLE I.—Concluded.

Chief Chemist's number.	Name of Feeding Stuff.	Received from	Crude protein.	Crude fat.	Crude fiber.
			Per ct.	Per ct.	Per ct.
F. 259,	Cottonseed Meal,	E. Dallett Hemphill, West Chester,	36.38	12.72	12.20
F. 260,	Feed,	Chester Milling Co., Chester,	10.50	4.25	4.82
F. 261,	Special Middlings,	Bergin & Co., Nanticoke,	18.00	4.42	3.90
F. 262,	Cottonseed Meal,	M. F. Baringer, Philadelphia,	38.50	11.50	12.42
F. 263,	Mixed Chop,	Weddle & Sutton, West Newton,	10.00	5.74	3.46
F. 264,	Wheat Bran,	Weddle & Sutton, West Newton,	15.75	5.07	9.22
F. 265,	No. 2 Chop,	Weddle & Sutton, West Newton,	10.81	7.52	4.11
F. 266,	No. 1 Corn Chop,	Weddle & Sutton, West Newton,	9.63	4.92	2.38
F. 267,	Middlings,	Weddle & Sutton, West Newton,	15.25	3.58	2.28
F. 268,	Rye Distillers' Grains,	E. A. & J. L. Pennock, Chatham,	15.94	10.78	12.51
F. 269,	Special Egg Maker,	Penn. Primo Feed Co., Harrisburg,	12.19	3.37	2.04
F. 270,	Pigeon Feed,	Penn. Primo Feed Co., Harrisburg,	10.44	3.50	2.54
F. 271,	Dried Beet Pulp,	P. D. Handwork Co., Downingtown,	9.63	0.95	19.44
F. 272,	Lee's Best Conditioner,	H. L. Davis, Philadelphia,	29.88	5.51	9.39
F. 273,	Lee's Stock Food (Tonic),	H. L. Davis, Philadelphia,	22.13	2.07	6.46
F. 274,	Cottonseed Meal,	Wells & Walker, Downingtown,	41.13	8.45	5.62
F. 275,	Schumacher's Stock Food,	Fred Pontz, Lancaster,	10.69	4.35	12.01
F. 276,	Molasses Feed (No. 69059),	M. F. Baringer, Philadelphia,	18.00	5.51	12.80
F. 277,	Poultry Food,	W. F. Shope, Bellefonte,	18.06	5.11	5.63
F. 278,	Hominy (Baringer),	Brinton Walter, Parkesburg,	10.88	8.12	4.34
F. 279,	Ajax Flakes,	Brinton Walter, Parkesburg,	33.75	13.54	10.92
F. 280,	Beet Pulp (Larrowe),	Brinton Walter, Parkesburg,	8.19	1.33	18.14
F. 281,	Cottonseed Meal (Hunter),	Brinton Walter, Parkesburg,	37.25	12.65	8.52
F. 282,	Gluten Feed (Baringer),	Brinton Walter, Parkesburg,	23.88	3.40	6.28
F. 283,	Scratch Feed,	Wertz Milling Co., Reading,	11.63	5.38	3.91
F. 284,	Chick Feed,	Wertz Milling Co., Reading,	13.19	2.87	2.38

SAMPLES OBTAINED BY SPECIAL AGENTS OF THE DEPARTMENT OF AGRICULTURE.

During the year 1907, Special Agents of the Department of Agriculture visited one hundred and eight towns and cities in Pennsylvania, and collected five hundred and sixty samples of feeding stuffs, which were sent under seal to the Chief Chemist. In this list were sixty-six samples of condimental stock and poultry foods, only four of which were submitted to examination, owing to the fact, as stated in the introduction, that the examination of feeding stuffs, proper, would consume practically all of the time until June 1, 1908.

Of the five hundred and sixty samples collected, four hundred and ninety-eight have been examined chemically and microscopically, and the results and comments on the same are found in the following pages.

TABLE II.—COUNTIES VISITED AND NUMBER OF SAMPLES SECURED FROM EACH.

Name of County.	No. of samples.
Adams,	9
Armstrong,	23
Beaver,	36
Berks,	35
Blair,	2
Bradford,	7
Butler,	24
Cambria,	24
Chester,	19
Clarion,	11
Clearfield,	9
Crawford,	6
Cumberland,	40
Dauphin,	8
Fayette,	6
Franklin,	11
Greene,	2
Jefferson,	11
Lackawanna,	17
Lancaster,	73
Lawrence,	23
Luzerne,	30
Mercer,	27
Philadelphia,	5
Susquehanna,	18
Tioga,	19
Washington,	12
Westmoreland,	24
York,	29
Total,	560

The samples analyzed may be classified as follows:

TABLE III.—CLASSIFICATION OF SAMPLES ANALYZED.

Name of Feeding Stuff.	No. of samples.
Cottonseed meal,	11
Linseed meal, N. P.,	2
Linseed meal, O. P.,	23
Distillers' grains,	8
Brewers' grains,	6
Malt sprouts,	6
Gluten feed,	25
Hominy feed,	10
Corn feed meal,	5
Low grade flour,	15
Wheat middlings,	87
Mixed feed: Wheat by-products,	16
Wheat bran,	75
Oat by-products,	3
Mixed feeds: Proprietary and otherwise,	180
Miscellaneous feeds,	18
Animal by-products,	4
Condimental stock and poultry feeds,	4
Total,	498

GUARANTEES.

The following table shows what materials were deficient in protein or fat, or both of these valuable constituents, and the number of samples examined in each case.

TABLE IV.—SUMMARY OF DEFICIENCIES, 1907.

Name of Feeding Stuff.	Number of samples.	Deficient in protein and fat.	Deficient in protein.	Deficient in fat.
Cottonseed meal,	11	2	6	....
Distillers' grains,	8	2	4	....
Malt sprouts,*	6	....	....	2
Illinois gluten feed,	2	....	2	....
Piel Brothers' gluten feed,	1	....	1	....
Wellington gluten feed,	1	....	1	....
Low grade flour,†	15	1	1	1
Wheat middlings,‡	87	1	6	....
Mixed feed: Wheat by-products,§	16	....	1	1
Wheat bran,||	75	....	1	1
Friends' oat feed,	1	....	....	1
Royal oat feed,	2	1	....	1
Three star molasses grains,	1	....	....	1
Creamo dairy feed,	1	1	....	....
Holstein sugar feed,	5	1	2	....
Regal stock feed,	2	....	....	1
Mueller's molasses grains,**	10	....	5	....
Schumacher's stock feed,	11	....	....	1
Red Cow dairy feed,††	8	1	3	....
Hammond dairy feed,	4	....	3	....
Corno horse and mule feed,	1	....	1	....
Sterling chick feed,	1	....	1	....
Uncle Sam baby chick food,	1	1	....	....
Purina mash,	2	....	....	2
Simpson's chick feed,	1	....	1	....
Miscellaneous chop and mixed feeds,‡‡	91	2	3	11
Animal by-products,	4	1	1	....
Totals,	368	14	44	23

*Five samples guaranteed.
†Nine samples guaranteed.
‡Sixty-six samples guaranteed.
§Fourteen samples guaranteed.
||Sixty-two samples guaranteed.
**Seven samples guaranteed.
††Six samples guaranteed.
‡‡Seventy-four samples guaranteed.

In making up this table showing the deficiencies in protein and fat in certain feeding materials, we have not recognized less than one per cent. variation from the protein guarantee, or one-half of one per cent. variation from the fat guarantee. From the above table, one notices that fourteen samples out of three hundred and sixty-eight collected, were deficient in protein and fat, forty-four in protein alone and twenty-three in fat alone. In other words fifty-eight samples or fifteen per cent. contained less protein than guaranteed by manufacturers, and thirty-seven samples or ten per cent. were deficient in fat. Marked deficiency in protein occurred in some samples of cottonseed meal, distillers' grains and certain feeds containing molasses. The poor quality of cottonseed meal offered on the Pennsylvania market during the year, has been quite noticeable. Weather conditions through the growing season, seemed to have been largely at fault, making it more difficult for mills to separate the hulls from the seed. Therefore, as a result, we find low protein contents and more or less adulteration with cottonseed hulls. Many dealers took advantage of the provision in the act, whereby they were able to send samples to this Department for analysis, thereby establishing a guarantee of their own, rather than sell an article under a guarantee furnished by the manufacturer or jobber, which might prove to be false. This department commends the attitude of many such dealers, inasmuch as it shows a disposition to sell feeding stuffs under a proper guarantee. A guarantee maintenance, although very desirable, is not the only criterion by which one can judge of the quality of a feeding stuff. There seems to have been a disposition on the part of certain manufacturers to apparently try to cover up the presence of undesirable ingredients by such a phrase as "by-products of grain." In the majority of instances, we have discovered that the feeds put out by these manufacturers were adulterated with rice hulls. The use of the phrase "by-products of grain" is not permissible under the act, inasmuch as the "names of the several ingredients" must be plainly stated upon the package.

We have also noticed certain materials were sold under a guarantee of one per cent. protein, one per cent. fat, and not over a certain exceptionally high percentage of crude fiber. To guarantee a feed in this manner, is simply a matter of form, and although the manufacturer may be complying with the letter of the law, it certainly is not giving the information which the law intended it should give. A guarantee, to be of value, should approximate the actual composition of the material in question. A manufacturer who resorts to this method of stating his guarantees, can give no assurance to the purchaser that he will deliver more than he guarantees in valuable nutrients.

It has been the policy of the writer to report the results of the chemical and microscopical examinations to dealers in and manufacturers of samples analyzed. In many instances, the result of such a procedure has been to stop the sale of an article of food which was either adulterated or sold under false guarantees, and such a step on the part of the local dealer or manufacturer, has undoubtedly saved thousands of dollars to the stock feeders during the past year. It is gratifying to note that several brands of gluten feeds are being sold under a guarantee more nearly in conformity to actual analysis.

A large number of prosecutions have been brought throughout the

Commonwealth, as a result of violations of the Feeding Stuffs Law, during the year 1907, occurring in the counties of Washington, Lancaster, Westmoreland, Chester, Allegheny, Beaver, Tioga, Jefferson, Mercer, Lawrence, Luzerne, Armstrong, Susquehanna, Lackawanna, York, Adams, Berks, Cambria and Cumberland.

ADULTERATION OF FEEDING STUFFS.

The most serious adulteration of feeding stuffs, during the year 1907, was the use of ground rice hulls in molasses grains, and a few other dairy feeds. It was doubtless a great temptation on the part of the manufacturer to practice adulteration, owing to the fact that exceptionally high feed prices prevailed during the year. The presence of this adulterant was unfortunately obscured by the use of molasses, so that it was almost impossible to discover rice hulls in these molasses feeds without the aid of a microscope. It is to be regretted that some manufacturers are taking advantage of this fact, to not only cheapen what otherwise might be a high grade feed, but also place upon the market an article, which is adulterated with an ingredient injurious to the health of domestic animals. The presence of rice hulls in certain articles formed the basis of many suits brought by this Department, against dealers handling goods sold in violation of the act. Rice hulls are worthless as a feed and should be used only for fuel or packing purposes. Any violation of our feeding stuff law, will eventually recoil upon him who commits it, and no manufacturer or dealer who values his reputation will yield to the temptation to adulterate any kind of feeding material, whether the adulterant used is injurious or not.

In order to throw some light upon the analysis of various adulterants sometimes used in feeding stuffs, the following table* is given:

TABLE V.—PARTIAL ANALYSES OF ADULTERANTS.

	Protein.	Fat.	Fiber.
	Per ct.	Per ct.	Per ct.
Oat hulls,	3.03	1.06	29.07
Peanut hulls,	4.50	0.81	67.31
Ground corn cob,	2.50	0.50	30.10
Rice hulls,	3.60	0.70	35.70
Cottonseed hulls,	4.00	2.00	44.40

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*Bulletin No. 131, Kentucky Experiment Station.

CLASSIFICATION OF FEEDING STUFFS.

Feeding stuffs can be conveniently arranged into classes according to their protein content.

The percentage of protein in feeding stuffs gradually decreases from cottonseed meal to oat feeds which are not much better than oat hulls.

The arrangement here presented is practically the one suggested by Jordan and Jenter* with a few of the more recent feeds added.

TABLE VI.—FEEDING STUFFS ARRANGED IN CLASSES.

CLASS I—30 per cent. to 45 per cent. protein,.........	Cottonseed meal, linseed meal, Cream, Chicago and King gluten meals, Ajax Flakes, Biles' XXXX and Merchants' distillers' grains.
CLASS II—20 per cent. to 30 per cent. protein,..........	Gluten feeds, malt sprouts, dried brewers' grains, buckwheat middlings, peas and beans.
CLASS III—14 per cent. to 20 per cent. protein,..........	Red dog flour, bran and middlings from wheat and rye, H-O, Sucrene, Hammond and Protena dairy feeds and Molasses grains.
CLASS IV— 8 per cent. to 14 per cent. protein,..........	Quaker dairy feed, barley, corn, oats, rye, wheat, cerealine, hominy, corn and oats chop, corn bran, H-O and Sucrene horse feeds, American poultry food and dried beet pulp.
CLASS V— 5 per cent. to 8 per cent. protein,..........	..Low-grade oat feeds.

The hays and other coarse fodders can be classed in the fourth group.

AVERAGE PARTIAL COMPOSITION AND RETAIL PRICE.

The following table shows the average partial composition and retail price of several of the feeding stuffs examined in 1907. They are arranged in classes according to their protein content.

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*Bul. 166, New York (Geneva) Experiment Station.

TABLE VII.—AVERAGE ANALYSIS AND RETAIL PRICE.

Name of Feeding Stuff.	Protein.	Fat.	Fiber.	Price per ton.
Class 1 (30 per cent.—45 per cent. Protein).	Per ct.	Per ct.	Per ct.	
Cottonseed meal,	39.16	9.55	10.16	$31 90
Linseed meal, N. P.,	36.59	2.94	7.93	33 00
Linseed meal, O. P.,	34.75	7.23	8.17	36.57
Biles' fourex grains,	32.47	13.45	9.44	32 00
Class 2 (20 per cent.—30 per cent. Protein).				
Ajax flakes,	29.59	13.41	11.60	30 33
Blue ribbon corn grains,	27.19	7.53	15.27	27 00
Pekin gluten feed,	26.50	3.68	7.26	30 50
Brewers' grains,	26.34	7.30	13.25	22 80
Malt sprouts,	26.06	2.04	12.33	24 75
Primo golden dairy feed,	25.56	7.86	10.34	38 00
Warner's gluten feed,	25.02	3.01	7.57	29 67
Buffalo gluten feed,	24.59	3.99	7.13	30 18
Corn protegran,	24.47	9.71	10.06	29 00
Schumachers' calf meal,	21.52	8.52	3.08	80 00
Union brand gluten feed,	21.40	5.43	6.70	31 00
Class 3 (14 per cent.—20 per cent. Protein).				
Protena dairy feed,	19.75	4.02	15.76	25 00
Piel Brothers' gluten feed,	19.69	3.86	7.06	31 00
Sucrene dairy feed,	17.36	5.13	11.29	26 37
Wheat middlings,	17.17	5.24	5.97	31 14
Low grade flour,	17.07	4.44	2.32	33 96
Primo Hercules horse feed,	16.44	4.85	8.56	38 00
Mixed feed: Wheat by-products,	16.19	4.91	7.49	29 18
Wheat bran,	15.74	5.02	9.72	28 66
Three star molasses grains,	15.73	2.19	13.36	21 00
Mueller's molasses grains,	15.56	3.71	11.75	24 67
Primo peerless hog feed,	15.38	5.40	4.31	42 00
Hammond dairy feed,	15.32	4.26	9.59	26 00
Red cow dairy feed,	15.02	3.58	12.67	23 64
Class 4 (8 per cent.—14 per cent. Protein).				
Holstein sugar feed,	13.96	3.63	14.69	25 90
Creamo dairy feed,	13.00	3.46	15.34	26 00
Sucrene horse, mule and ox feed,	12.28	3.88	9.30	26 00
American poultry food,	12.06	5.08	4.32	32 00
Quaker dairy feed,	12.00	3.70	17.54	26 00
Illinois gluten feed,	11.57	3.12	4.69	28 00
Alfalfa horse feed,	11.35	4.60	7.34	26 75
Wellington gluten feed,	11.25	3.28	4.11	30 00
Ideal horse feed,	11.06	3.48	33.99	27 00
Schumacher's stock feed,	10.82	4.28	11.24	30 45
Sterling stock feed,	10.44	3.70	10.39	32 00
Hominy feed,	10.13	7.95	5.08	31 22
Corn feed meal,	9.94	6.00	3.60	31 40
Dried beet pulp,	8.90	.69	19.45	23 33
Corno horse and mule feed,	8.75	3.96	13.84	29 00
Victor feed,	8.49	3.99	10.86	30 33
Boss chop feed,	8.11	3.67	11.13	29 00
Class 5 (5 per cent.—8 per cent. Protein).				
Regal stock feed,	7.58	3.01	12.77	30 75
Royal oat feed,	6.63	2.03	23.55	22 00
Friends' oat feed,	5.19	2.02	19.12	....
Animal By-Products.				
Model beef scraps,	61.64	9.03	....	58 00
Three medal poultry meat,	59.81	12.42	....	45 00
Beef poultry ration,	46.74	18.52	....	*3 00
Animal meal,	27.05	18.30	....	....
Condimental Stock and Poultry Foods.				
U. S. poultry food,	23.44	†5.04	6.73	‡0 17
International stock food,	12.81	3.63	10.66	‡0 14
Chick manna,	12.31	4.42	2.54	‡0 10
Pratt's poultry food,	7.94	†2.27	18.84	‡0 20

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*Per cwt.
†Including sulphur.
‡Per pound.

SELECTION OF FEEDING STUFFS.

A glance at the preceding table will reveal the fact that the retail price of a feed is no indication of its value, as a source of nutrients. Certain feeds containing approximately 39, 24, 16, 11 and 7 per cent. of protein, respectively, sell for the uniform price of about thirty dollars per ton. As long as the farmer can raise plenty of corn, hay and oats, he cannot afford to purchase any feeding stuff containing less than fourteen per cent. of protein. There is, on the market, a large variety of feeding stuffs of good quality, from which he should have no difficulty in choosing those best adapted to his need. Where all feeding material must be purchased, undoubtedly, the low protein feeds are of considerable value in furnishing carbo-hydrates, and which also must accompany the use of nitrogenous materials.

The amount of protein in the five classes of feeds, varies from 39.16 per cent. in cottonseed meal to 5.19 per cent. in Friends' oat feed, and may be arranged as follows:

Class 1. Cottonseed meal, linseed meal and the *better* corn distillers' grains, carrying from 32.47 to 39.16 per cent. of protein, and costing from $31.90 to $36.57.

Class 2. Corn distillers' grains, *better* gluten feeds, dried brewers' grains, Schumacher's calf meal and Primo golden dairy feed, carrying from 21.40 to 29.59 per cent. of protein, and costing from $22.80 to $80.00 per ton.

Class 3. Wheat by-products, *low grade* gluten feed, dairy and poultry feed mixtures and a few brands of molasses grains, carrying from 15.02 to 19.75 per cent. of protein, and costing from $21 to $42.

Class 4. Hominy feed, corn and oat feed, dried beet pulp, chop feed and horse feed mixtures, carrying from 8.11 to 13.96 per cent. of protein, and costing from $23.33 to $32.00.

Class 5. Low grade feeds, carrying from 5.19 to 7.38 per cent. of protein, and costing from $22.00 to $30.75.

The purchase of commercial feeding stuffs requires considerable skill on the part of the stock feeder. The farmer should produce all of the coarse fodder which is needed for stock, but it is necessary for him to buy feeds which are rich in digestible protein, in order to supplement the crops grown on the farm. It is believed that the following information, taken from the 1907-8 Report of the Connecticut Experiment Station, will be of great assistance to Pennsylvania stock feeders in the proper balancing of rations.

"The average composition of the coarse fodders commonly raised on the farm, and of the amounts of digestible matters,—nutrients,—in them.

COMPOSITION. POUNDS PER ONE HUNDRED.

	Hay of mixed grasses.	Timothy hay.	Red top hay.	Corn stover.	Corn silage.	Corn fodder.	Corn meal.
Water,	14.0	14.0	14.0	40.0	80.0	40.0	13.3
Ash,	5.3	4.2	4.6	3.9	1.1	2.8	1.4
Protein,	7.9	8.4	6.5	4.6	1.7	4.7	9.1
Fiber,	27.7	28.1	28.5	20.6	5.4	14.8	2.0
Nitrogen-free extract,	42.8	43.4	44.9	30.1	11.1	36.0	70.3
Fat,	2.3	1.9	1.5	0.8	0.7	1.7	3.9
	100.0	100.0	100.0	100.0	100.0	100.0	100.0

DIGESTIBLE MATTER, 'NUTRIENTS,' IN POUNDS.

	Hay of mixed grasses.	Timothy hay.	Red top hay.	Corn stover.	Corn silage.	Corn fodder.	Corn meal.
Protein,	3.7	4.0	4.0	1.7	0.8	2.1	6.0
Fiber,	18.0	14.1	17.4	13.2	3.5	9.3	....
Nitrogen—free extract,	25.3	26.9	27.8	17.8	7.7	26.3	64.6
Fat,	1.0	1.0	0.8	0.5	0.5	1.2	3.3

POUNDS OF NITROGEN, PHOSPHORIC ACID AND POTASH.

	Hay of mixed grasses.	Timothy hay.	Red top hay.	Corn stover.	Corn silage.	Corn fodder.	Corn meal.
Nitrogen,	1.26	1.34	1.04	0.74	0.27	0.75	1.45
Phosphoric acid,	0.32	0.33	0.33	0.20	0.13	0.54	0.70
Potash,	1.61	1.42	0.95	0.92	0.39	0.89	0.30

Twenty-five pounds of dry, coarse fodder is about as much as the average cow, weighing perhaps 850 pounds, ought to eat per day of such kind of feed. The following statement shows the digestible food in this quantity of hay, and for comparison the approximate amounts which experience shows are required by a cow of 850 pounds in full milk.

	In 25 lbs. hay.	Standard requirement.
	Pounds.	Pounds.
Organic matter,	20.0	21.0
Digestible protein,	0.9	1.8- 2.1
Digestible fiber and Nitrogen-free extract,	10.8	10.6-11.2
Digestible fat,	0.2	0.4- 0.6

From this it appears that meadow hay, if fed in sufficient amount to supply the daily need of the animal for non-nitrogenous nutrients and organic matter, supplies only a scant half of the protein requirement. It cannot be fed in quantity sufficient to meet this protein requirement because the animal cannot handle this quantity.

The case cannot be greatly improved with corn meal alone. Fifteen pounds of hay with 8 pounds of corn meal will supply:

1.04 pounds of digestible protein,
11.65 pounds of digestible fiber and N.-free ext.,
0.41 pounds of digestible fat,

which is far from enough protein but is about as near as we can come to a standard ration with these two things. There is needed some feed, rich in protein and relatively poor in starchy matter, to 'balance' the ration so that neither the coarse fodder nor the meal shall be fed to waste.

A ration made up of 12 1-2 pounds of hay, 2 pounds cotton seed meal and five pounds each of corn meal and wheat bran would supply about:

20.0 pounds of dry organic matter,
2.1 pounds of digestible protein,
11.2 pounds of digestible fiber and N.-free ext.,
0.6 pounds of digestible fat,

which fully meets the requirements of a standard ration for a cow in full milk."

The analyses given in Table XII show what feeds meet this demand for digestible protein at reasonable prices, and those that do not supply this valuable constituent and cannot be fed to advantage.

COMPARISON OF THE COST OF VARIOUS FEEDING STUFFS.

The following table shows the actual amounts of protein and fat which the consumer obtained for $1.00:

TABLE VIII.—POUNDS OF PROTEIN AND FAT OBTAINED IN FEEDING STUFFS FOR ONE DOLLAR, AT CURRENT RETAIL PRICES.

Name of Feeding Stuff.	Protein.	Fat.
Class 1 (30 per cent —45 per cent. Protein).		
Cottonseed meal,	24.55	5.99
Linseed meal, N. P.,	22.18	1.78
Linseed meal, O. P.,	19.00	3.95
Biles' fourex grains,	20.29	8.41
Class 2 (20 per cent.—30 per cent. Protein).		
Ajax flakes,	19.51	8.84
Blue ribbon corn grains,	20.14	5.58
Pekin gluten feed,	17.38	2.41
Brewers' grains,	23.11	6.40
Malt sprouts,	21.06	1.65
Primo golden dairy feed,	13.45	4.14
Warner's gluten feed,	16.87	2.03
Buffalo gluten feed,	16.30	2.64
Corn protegran,	16.88	6.70
Schumacher's calf meal,	5.38	2.13
Union brand gluten feed,	13.81	3.50
Class 3 (14 per cent.—20 per cent. Protein).		
Protena dairy feed,	15.80	3.22
Piel Brothers' gluten feed,	12.70	2.49
Sucrene dairy feed,	13.17	3.89
Wheat middlings,	11.02	3.37
Low grade flour,	10.05	2.61
Primo Hercules horse feed,	8.65	2.55
Mixed feed: Wheat by-products,	11.10	3.37
Wheat bran,	10.98	3.50
Three star molasses grains,	14.98	2.09
Muellers' molasses grains,	12.61	3.01
Primo peerless hog feed,	7.32	2.57
Hammond dairy feed,	11.78	3.28
Red cow dairy feed,	12.71	3.03
Class 4 (8 per cent.—14 per cent. Protein).		
Holstein sugar feed,	10.78	2.84
Creamo dairy feed,	10.00	2.66
Sucrene horse, mule and ox feed,	9.45	2.98
American poultry food,	7.54	3.18
Quaker dairy feed,	9.23	2.85
Illinois gluten feed,	8.27	2.23
Alfalfa horse feed,	8.49	3.44
Wellington gluten feed,	7.50	2.19
Ideal horse feed,	8.19	2.58
Schumacher's stock feed,	7.11	2.81
Sterling stock feed,	6.53	2.31
Hominy feed,	6.49	5.09
Corn feed meal,	6.33	3.82
Dried beet pulp,	7.63	.59
Corno horse and mule feed,	6.03	2.73
Victor feed,	5.60	2.63
Boss chop feed,	5.59	2.53
Class 5 (5 per cent.—8 per cent. Protein).		
Regal stock feed,	4.80	1.96
Royal oat feed,	6.03	1.85

The average amounts of protein and fat, respectively, which may be obtained for $1.00, in the five different classes, are as follows:

Class 1, 21.50 and 5.03 pounds.
Class 2, 16.72 and 4.18 pounds.
Class 3, 11.76 and 2.99 pounds.
Class 4, 7.69 and 2.79 pounds.
Class 5, 5.42 and 1.91 pounds.

It is noticeable that the amounts of protein and fat obtainable for one dollar constantly decreases from Class 1 to Class 5. All the feeds included in the first three classes may be considered protein feeds, and all those in the last two classes are chiefly carbo-hydrate feeds. As the farmer needs to purchase protein to supplement the home grown feeds, it is certainly unwise for him to buy any article included in the last two classes. Occasionally one may find it to his advantage to purchase some carbo-hydrate feed included in Class 4, but under no circumstances, can the writer recommend the purchase of such material as is found in Class 5, at the prevailing prices. The figures found in the preceding table are based on the average retail prices of the feeds during 1907. The price of the same article varies according to locality and, of course, is a great factor in the selection of proper materials.

COMPOSITION OF FEEDING STUFFS.

Knowing the amounts of protein, fat and fiber in feed, one can form some opinion as to its feeding value, although its digestibility must be taken into consideration. An index of the nature of the feed is usually found in the percentages of nutrients present. The following table presents figures, showing the average percentages of protein, fat and fiber in the principal feeding stuffs found upon the market. The partial composition of various mixtures is also given. Most of the figures have been taken from Farmers' Bulletin No. 22, Department of Agriculture, Washington, D. C. Since the publication of this bulletin, the composition of certain feeds has changed somewhat, therefore, the following figures more nearly represent their analyses at the present time. The figures showing the partial composition of the various mixtures given in the latter part of the table, were obtained by calculation. The percentages given are averages from which there are slight variations.

TABLE IX.—AVERAGE PARTIAL COMPOSITION OF FEEDING STUFFS.

Name of Feed.	Protein.	Fat.	Fiber.
	Per ct.	Per ct.	Per ct.
Cottonseed meal,	42.3	9.0	5.6
Linseed meal, N. P.,	38.2	3.0	9.5
Linseed meal, O. P.,	32.9	7.9	8.9
Ground linseed,	21.6	30.4	7.3
Distillers' dried grains,	32.0	13.0	11.8
Brewers' dried grains,	25.0	5.6	11.0
Malt sprouts,	23.2	1.7	10.7
Gluten meal,	29.7	3.0	2.2
Gluten feed,	24.0	3.5	5.3
Buckwheat middlings,	28.9	7.1	4.1
Wheat middlings,	17.4	5.6	5.2
Wheat bran,	15.4	4.0	9.0
Oats,	11.8	5.0	9.5
Wheat,	11.9	2.1	1.8
Barley,	12.4	1.8	2.7
Corn,	10.5	5.4	2.1
Rye,	10.6	1.7	1.7
Buckwheat,	10.0	2.2	8.7
Corn meal,	9.2	3.8	1.9
Oat meal,	14.7	7.1	0.9
Barley meal,	10.5	2.2	6.5
Hominy chop,	9.8	8.3	3.8
Corn and cob meal,	8.5	3.5	6.6
Corn cob,	2.4	0.5	30.1
Oat hulls,	3.4	1.3	37.2
Corn and oats, equal parts,	11.1	5.2	5.8
Corn, 75 per cent.; oats, 25 per cent.,	10.8	5.3	3.9
Corn, 25 per cent.; oats, 75 per cent.,	12.4	5.1	7.6
Oats and oat hulls, equal parts,	7.6	3.1	23.5
Oats, 75 per cent.; oat hulls, 25 per cent.,	10.7	4.0	16.5
Oats, 25 per cent.; oat hulls, 75 per cent.,	5.5	2.2	30.5
Corn, oats and barley, equal parts,	11.5	4.0	4.7
Corn, oats and rye, equal parts,	10.9	4.0	4.4
Oats and rye, equal parts,	11.2	3.3	5.6

In Table XII are given the percentages of moisture, crude protein, crude fat and crude fiber, found in each feed as determined by chemical analysis. In order to make it easier to understand the results, the following brief explanations are given:

Moisture, or water, is present in all feeding stuffs. The material may seem to be dry, but nevertheless it contains an appreciable amount of water which is determined by heating a known quantity of the food, at the temperature of boiling water for several hours and noting the loss of weight. No very close comparison can be made of the value of feeding stuffs, unless they are compared on a moisture-free basis.

Protein is a term which includes all the nitrogenous compounds of a feed, regardless of their nature, and is obtained by multiplying the percentage of nitrogen present by 6.25, inasmuch as protein contains approximately 16 per cent. of nitrogen. In a general way, the term protein is used to express the amount of those ingredients of feed which contain nitrogen as an important constituent, and which the animal uses to restore the waste of tissues and muscles, and form flesh. Protein enters very largely into the make up of the white of egg, curd of milk, lean meat, gelatin, etc., and therefore, is the most necessary ingredient for the farmer to purchase. It is the most important nutrient in commercial feeding stuffs and not easily produced on the farm.

Crude fat, or the ether extract, properly speaking, is made up of the substances which are extracted from the dry feeding stuffs by absolute ether. It consists chiefly of the fats and oils but the gums, waxes and coloring matter are also removed. A pound of digestible fat has about 2.25 times as much value as a pound of digestible carbo-hydrates in producing heat and energy. An excess of fat in feeding stuffs tends to retard digestion and certain feeds containing over 10 per cent. may become sour and unpalatable.

Crude fiber is found chiefly in the woody part of grains, hay and other feeding material and is usually the most indigestible portion of a feed. It is practically valueless in feeding stuffs as the coefficient of digestibility of crude fiber is quite low. Ordinarily, a feeding stuff having a high content of crude fiber, is classed as a low grade feed. Cottonseed hulls, oat hulls, peanut hulls, corn cob, rice hulls, etc., contain a high percentage of crude fiber. For the reason that the farmer can easily produce sufficient fibrous material in the nature of straw, hay, corn stover, etc., it is unwise for him to expend money for the purchase of commercial feeding stuffs containing a large amount of this difficultly digestible constituent.

A more extended analysis of a feeding stuff will reveal the presence of crude ash and nitrogen-free extract.

Ash is what is left after submitting a portion of the feeding stuff to the action of low heat. It contains a certain amount of sand, but consists chiefly of the alkalies, lime, magnesia, soda and potash combined with chlorine and carbonic, sulphuric or phosphoric acid. Ash is an important constituent of feeding stuffs, because such mineral matters are necessary for the formation of bones, without which the health of the animal would be seriously interfered with.

Nitrogen-free extract includes starch, sugar, gum and other bodies. These, together with the fat, maintain the animal heat and furnish energy for the production of work required, provided the animal is sufficiently nourished.

VALUE OF ANALYSES OF FEEDING STUFFS.

A table showing the chemical analyses of feeding stuffs is useful in several ways.

First. It immediately shows if any particular brand of feed or any particular sample of that brand is of inferior or superior quality, as compared with others of the same class.

Second. It shows whether the guarantees of the manufacturer are correct.

Third. If the material is adulterated or not, it often shows it, and many times if it is adulterated, the table of analyses indicates the nature of the adulteration, although a microscopical examination should be made in conjunction with the chemical analysis.

Fourth. It supplies the data for the compounding of rations for farm animals, and in order to do this skillfully, one must make a study of the subject of feeding animals, the exposition of which cannot be undertaken within the limited space furnished in a bulletin.

COEFFICIENTS OF DIGESTIBILITY.

Feeding stuffs are not entirely digested. A portion of each passes through the body without being absorbed and used by the animal. It is obvious, therefore, that of two feeds having nearly the same composition, the one which is more digestible has a greater nutritive value. A certain amount of the protein, fat and fiber, etc., of each feed is digestible by animals, and the term "Coefficients of Digestibility" represents the percentages of nutrients retained in the process of digestion. These percentages vary with different feeds.

In Table X will be found digestion coefficients of many of the feeds used at the present time. For instance, the average digestion coefficient of protein in malt sprouts is 78 and in cottonseed meal, it is 84. That is, out of every 100 pounds of protein furnished by malt sprouts 78 pounds are digested by neat cattle; while out of the same amount of protein supplied by cottonseed meal 84 pounds are utilized by the animal, provided, of course, that these feeds are of average quality and the animal is in good health.

To make an actual use of this table, we will take the analysis of a sample of cottonseed meal (Chief Chemist's No. 1111), found on pages 44 and 45, which is as follows:

Crude protein, 41.00 per cent.
Crude fat, 8.59 per cent.
Crude fiber, 8.91 per cent.

In other words, each 100 pounds of this brand of feed, contained 41 pounds of crude protein, 8.59 pounds of crude fat and 8.91 pounds of crude fiber. By referring to the following table, we see that 84 per cent. of the protein, 94 per cent. of the fat and 35 per cent. of the fiber is digestible. By simple proportion, 100:84::41:X, we find that 34.44 pounds of protein out of 41 pounds present, are digestible. In a similar manner, we can determine the amount of crude fat and crude fiber which is digestible.

Although it is not claimed that the figures in the following table are absolutely correct, yet they are useful in ascertaining with approximate accuracy the amounts of available nutrients furnished by different feeding stuffs. These co-efficients were obtained in digestion experiments with ruminants, and most of them are taken from Lindsey's compilation.*

TABLE X.—DIGESTION COÖEFFICIENTS OBTAINED IN EXPERIMENTS WITH RUMINANTS.

Name of Feed.	Protein.	Fat.	Fiber.
Linseed meal, O. P.,	89	89	57
Linseed meal, N. P.,	85	97	80
Cottonseed meal,	84	94	35
Gluten meal,	88	93	....
Gluten feed,	85	83	76
Dried distillers' grains,	73	95	95
Corn meal,	66	91	....
Hominy feed,	65	92	67
Oats, whole,	77	89	31
Malt sprouts,	78	94	67
Dried brewers' grains,	81	89	49
Wheat bran,	77	63	39
Wheat middlings,	77	88	30
Corn and oat feeds, low grade,	70	74	58
H-O dairy feed,†	78	86	41
H-O horse feed,†	74	84	35
Corn and cob meal,†	56	84	46
Molasses beet pulp,	64	....	84
Molasses feed,	63	88	52

WEIGHT OF FEEDING STUFFS.

This table was prepared by weighing a carefully measured quantity of the several feeds.

TABLE XI.—AVERAGE WEIGHT‡ OF ONE QUART OF FEEDS NAMED.

Cottonseed meal,	1.5 lbs.
Linseed meal, N. P.,	0.9 lbs.
Linseed meal, O. P.,	1.1 lbs.
Gluten meal,	1.7 lbs.
Gluten feed,	1.3 lbs.
Germ oil meal,	1.4 lbs.
Distillers' dried grains,	0.5-0.7 lbs.
Malt sprouts,	0.6 lbs.
Brewers' dried grains,	0.6 lbs.
Wheat middlings (flour),	1.2 lbs.
Wheat middlings (standard),	0.8 lbs
Mixed feed, wheat,	0.6 lbs.
Wheat bran,	0.5 lbs.

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*Mass. (Hatch Experiment Station, 18th Report.)
†Bulletin 77, U. S. Department of Agriculture.
‡Bul. 106, Mass. (Hatch) Agr'l Exp't Station.

H-O dairy feed,	0.7 lbs.
Oat middlings,	1.5 lbs.
Rye feed,	1.3 lbs.
Oats, whole,	1.0 lbs.
Wheat, whole,	1.9 lbs.
Barley, whole,	1.5 lbs.
Rye, whole,	1.7 lbs.
Corn, whole,	1.7 lbs
Oats, ground,	0.7 lbs.
Wheat, ground,	1.7 lbs.
Barley meal,	1.1 lbs.
Rye meal,	1.5 lbs.
Corn meal,	1.5 lbs.
Corn and cob-meal,	1.4 lbs.
Corn bran,	0.5 lbs.
Hominy meal,	1.1 lbs.
Corn and oat feed, Victor,	0.7 lbs.
Quaker dairy feed,	1.0 lbs.
Oat feed,	0.8 lbs.

OPERATION OF THE FEEDING STUFF LAW.

The results of the work during the year 1907 have shown a marked improvement in the character of commercial feeding stuffs sold in Pennsylvania. The number of deficiencies in the guaranteed composition, has been less than during the preceding year, and certain low grade feeds composed largely of oat hulls, are not sold as much as in former years. I think we can safely say that with few exceptions, manufacturers are endeavoring to give honest value for the money expended by local dealers and consumers. As previously noted, several brands of molasses feed were adulterated with rice hulls, but we have reason to believe that, owing to educational influences, such feeds are not finding so ready a sale as formerly. In many instances, we have been assured by the manufacturers or importers that they will refrain from using this injurious ingredient in compounding their feeds.

We have had, during the past year, the hearty support of feed dealers and stock breeders in the enforcement of this act, for they realize they are receiving considerable benefit therefrom. New conditions in the feed business are continually arising, which demand legal control and immediate action by those in charge of the enforcement of the law. This Department does not expect any one to perform an impossibility. Were it not for such a law on our statute books, adulteration of commercial feeding stuffs would become more common, deception and fraud would be practiced more frequently and the State of Pennsylvania would become the dumping ground of worthless or inferior materials that the manufacturers could not sell in the neighboring states where feeding stuff laws exists. This law puts no interference in the way of legitimate trade, and the Department of Agriculture is anxious to promote the best interests of all honest parties.

The following summary of the Feeding Stuff Law is given for the information of those who are not thoroughly versed in its provisions:

SUMMARY OF THE PENNSYLVANIA FEEDING STUFF LAW.

Approved by the Governor, May 28th, 1907.

1 (a) *Feeding stuffs covered by the law:*

Cottonseed meals,
Cottonseed feeds,
Linseed meals,
Gluten meals,
Gluten feeds,
Pea meals,
Bone meals,
Peanut meals,
Cocoanut meals,
Maize feeds,
Starch feeds,
Sugar feeds,
Dried distillers' grains,
Dried brewers' grains,
Malt sprouts,
Hominy feeds,
Cerealine feeds,
Rice meals,
Dried beet refuse,
Oat feeds,
Corn and oat feeds,
Ground beef or fish scraps,
Dried blood,
Corn bran,
Mixed feeds,
Wheat bran, middlings and shorts,
Rye bran, middlings and shorts,
Buckwheat bran, middlings and shorts.

Poultry foods, other than mixtures of grains, whole or cracked.
All other materials of a nature similar to that of feeds mentioned in 1 (a).
Condimental stock and poultry foods (possessing nutritive value, combined with medicinal properties.)

(b) *Feeding stuffs not covered by the law:*

Hays, straws and corn stover.

Unmixed meals, made directly from the entire grains of wheat, rye, barley, oats, Indian corn, buckwheat, broom corn, flaxseed, sugar cane and sorghum.

2. *Statements to be printed on bags or on tags, securely attached to the same:*

(a) Number of net pounds contained therein.
(b) Name, brand or trademark of feeding stuff.
(c) Name and address of the manufacturer or importer.
(d) Guaranteed percentage of crude protein.

(e) Guaranteed percentage of crude fat.

(f) Guaranteed percentage of crude fiber.

(g) In case of mixed feeds, the names of the several ingredients of which the article is composed.

The sale of corn or buckwheat bran and middlings, or any mixture of two or more of these articles, also of mixed feeds composed of the entire grains of the cereals, can be sold at the mill where manufactured without the above statements accompanying the sale, inasmuch as the purchaser has an opportunity to ascertain directly from the manufacturer concerning their purity. Wheat bran or wheat middlings, rye bran or rye middlings, or any mixture of two or more of these articles, when sold at any other place than at the mill where manufactured, must have a tag or printed statement attached to each package guaranteeing the contents of the package to be pure and unadulterated wheat bran or wheat middlings, rye bran or rye middlings or a mixture of two or more of such articles, and also stating the number of net pounds contained therein, the name and address of the manufacturer or importer, and in the case of a mixture, the names of the several ingredients of which the contents of the package is composed. No guaranteed analysis is required on wheat and rye by-products. Whenever any commercial feeding stuff is kept for sale in bulk, the dealer must furnish the above statements to the purchaser upon request.

ACKNOWLEDGMENTS.

To the Pennsylvania press and the various organs of the trade, as well as to all manufacturers of and dealers in commercial feeding stuffs, who have materially assisted us in our work, grateful acknowledgements are due and our hearty thanks are hereby extended. The writer also takes great pleasure in acknowledging the many courtesies received from Hon. N. B. Critchfield, Secretary of Agriculture. To him especial thanks are due, for his continued loyal support in all the work pertaining to Feeding Stuffs Control. It is my desire, also, to express my appreciation for the helpful co-operation and assistance rendered by General Agent G. G. Hutchison, and Special Agents W. H. Cornman, S. M. McHenry and John F. St. Clair. My thanks are also due and hereby extended to Messrs. Kellogg, Spicer, Potteiger and Broomell, Assistant Chemists, for the competent manner in which they have performed the many and very important details of the work in the examination of feeding stuffs, and which required an exhibition of skill and absolute accuracy at all times.

The microscopical examination of feeding stuffs offers many complicated features. To Mr. James W. Kellogg, credit is given for the able manner in which he performed the microscopical work reported in this bulletin.

DISCUSSION OF THE ANALYTICAL RESULTS.

OIL CAKE MEALS.

Cottonseed Meal.

Analyses on pages 44 and 45.

Cottonseed meal is obtained as a by-product in the manufacture of cottonseed oil. After removing approximately four-fifths of the oil from the cottonseed, which has previously been treated to remove the hulls and lint, the solid cakes are ground into meal.

The Interstate Cottonseed Crushers' Association, at a meeting held in May, 1907, graded cottonseed meal as follows:

Choice cottonseed meal must be finely ground, perfectly sound and sweet in odor, yellow, free from excess of lint and hulls, and by analysis, must contain at least eight per cent. of ammonia (41.15 per cent. protein.)

Prime cottonseed meal must be finely ground, of sweet odor, reasonably bright in color, yellow, not brown or reddish, and by analysis, must contain at least seven and one-half per cent. ammonia (38.50 per cent. protein).

Good cottonseed meal must be finely ground, of sweet odor, reasonably bright in color, and by analysis, must contain at least seven per cent. of ammonia (36 per cent. protein).

Eleven samples of cottonseed meal were examined in 1907 and only three could be called "choice," and one of these carried only 41 per cent. of protein.

Climatic conditions were such at the time the seeds were grown from which this material was made, that it was almost impossible to completely separate the hulls and lint. This resulted in meals of low protein content, which were more or less contaminated by hulls. Feeding stuffs are usually bought at wholesale on a guaranteed basis, and consumers, as well as jobbers, have a perfect right to demand a pro rata rebate if the goods they purchase are not as represented.

AVERAGE ANALYSES AND RETAIL PRICES.

	1905.	1906.	1907.
Number of samples,	1	9	11
Crude protein,	40.63	41.21	39.16
Crude fat,	7.09	9.09	9.55
Crude fiber,	....	....	10.16
Price per ton,	$28 00	$30 83	$31 90

Linseed Meal.

Analyses on pages 44-47.

Linseed meal is also known on the market as "Oil Meal" and "Flaxseed Meal," and these names are applied to the product obtained by extracting more or less of the oil from ground flaxseed. There are two methods in use for extracting the oil. In the "old process" the crushed seeds are heated and subjected to hydraulic pressure. The residue consists of cakes which are ground and placed upon the market as old process oil meal. In the "new process" naphtha or some other volatile solvent is used to extract the oil, which removes more of the fat than does the old process. New process meal, therefore, contains more protein than old process meal. Two samples of new process meal were examined and carried an average of 36.59 per cent. of protein, 2.94 per cent. of fat and 7.93 per cent. of fiber. Twenty-three samples of old process meal were analyzed which showed an average of 34.75 per cent. of crude protein; 7.23 per cent. of crude fat and 8.17 per cent. of crude fiber.

AVERAGE ANALYSES AND RETAIL PRICES.

	New Process.			Old Process.		
	1905.	1906.	1907.	1905.	1906.	1907.
Number of samples,	2	4	2	10	4	23
Crude protein,	36.27	35.86	36.59	32.33	33.75	34.75
Crude fat,	2.76	3.06	2.94	7.12	7.26	7.23
Crude fiber,	....	....	7.93	....	....	8.17
Price per ton,	$30 50	$30.52	$33 00	$38 10	$37 25	$36 57

DISTILLERY AND BREWERY BY-PRODUCTS.

Distillers' Grains.

Analyses on pages 46 and 47.

Distillers' grains are obtained from the cereals in the manufacture of alcohol or whisky. Usually corn and rye are used, but sometimes, we find that oats, wheat or barley are employed. Briefly, the process is as follows:

The grains are coarsely ground and treated with a malt solution, which converts the starch into sugar. Yeast is then added, thus changing the sugar into alcohol, which can be distilled. The residue consisting chiefly of the protein, germs and hulls of the grains used, is dried and sold as food for cattle. Distillers' dried grains, having all the starch removed, is consequently richer in protein and fat than the grains from which they are derived. These grains are considered a valuable and economical food for dairy animals.

Of the eight samples analyzed, seven of which were guaranteed, six fell short of their protein guarantees, and two contained less fat than guaranteed.

AVERAGE ANALYSES AND RETAIL PRICES.

	1905.	1906.	1907.
Number of samples,	4	4	8
Crude protein,	31.19	30.94	28.73
Crude fat,	13.08	13.04	11.76
Crude fiber,	....	....	11.13
Price per ton,	$26 66	$27 25	$30 00

Brewers' Grains.

Analyses on pages 46 and 47.

Brewers' grains are obtained from barley in the manufacture of malt liquors. The barley is first placed under conditions favorable to germination, and during this process, the starch is converted into sugar. The sprouts are removed and sold as cattle food, while the malted grains are crushed, the sugar is extracted and the residue is dried and placed upon the market as brewers' dried grains. Distillers' and brewers' grains are fairly digestible.

AVERAGE ANALYSES AND RETAIL PRICES.

	1905.	1906.	1907.
Number of samples,	1	1	6
Crude protein,	28.50	22.50	26.34
Crude fat,	7.27	6.93	7.30
Crude fiber,	....	....	13.25
Price per ton,	$20 00	$23 00	$22 80

Malt Sprouts.

Analyses on pages 46-49.

As stated above, the sprouts formed in the germination of barley are removed and sold as cattle food. They contain little fat, but are valuable as a source of protein.

AVERAGE ANALYSES AND RETAIL PRICES.

	1905.	1906.	1907.
Number of samples,	1	5	6
Crude protein,	25.13	25.49	26.06
Crude fat,	1.53	2.12	2.04
Crude fiber,	....	....	12.33
Price per ton,	$20 00	$19 60	$24 75

The average price at which this article was sold in 1907 was considerably higher than in previous years, which is also true of practically all of the feeding stuffs examined.

MAIZE BY-PRODUCTS.

Gluten Feed.

Analyses on pages 48-51.

Gluten feed is a by-product from maize in the manufacture of starch and sugar. Maize kernels are first soaked in weak sulphurous acid solution, then crushed and treated with running water. The hulls being the lightest portion, rise to the surface, the germs sink and the starch remains in suspension. The starch finally settles to the bottom, is separated from the germs, while the hulls are floated off, dried and sold as "corn bran."

The meal which contains the hard portion of the kernel is richest in protein, the gluten feed which contains more or less of the hulls contains about ten per cent. less protein than the meal, while corn bran is lowest in protein and highest in crude fiber.

One often finds on the market material sold as "gluten feed" which is really distillers' grains. The name of a feed is not always indicative of its nature.

Two samples of gluten feed examined showed a large amount of corn starch present, which resulted from an incomplete separation of this product. Naturally it resulted in feed of low protein content. These two samples were of the same brand of goods and were also artifically colored with aniline dyes.

The writer is of the opinion that the majority of the brands of gluten feed upon our markets are artificially colored, and this matter will be a subject for further consideration by this Department.

AVERAGE ANALYSES AND RETAIL PRICES.

	1905.	1906.	1907.
Number of samples,	7	12	25
Crude protein,	23.76	25.04	24.37
Crude fat,	3.52	3.86	3.80
Crude fiber,	....	....	7.21
Price per ton,	$25 50	$25 61	$30 27

Hominy Feed.

Analyses on pages 50 and 51.

This material is a by-product from the manufacture of hominy and starch. It consists principally of the hull and germ of the maize kernel, is quite rich in fat and contains but little more protein and fiber than does corn meal. Hominy feed has practically the same value as average corn meal for feeding purposes.

AVERAGE ANALYSES AND RETAIL PRICES.

	1905.	1906.	1907.
Number of samples,	1	6	10
Crude protein,	10.44	10.73	10.13
Crude fat,	8.55	8.92	7.95
Crude fiber,	....	....	5.08
Price per ton,	$26 00	$22 50	$31 22

Corn Feed Meal.

Analyses on pages 50 and 51.

This article, usually a mixture of corn meal and corn bran contained as an average of five samples, 9.94 per cent. of crude protein, 6.00 per cent. of crude fat and 3.60 per cent. of crude fiber. The average price per ton was $31.40.

WHEAT OFFALS.

The by-products from wheat in the manufacture of flour continue to be very popular as sources of protein. The principal wheat by-products found in the market are the bran, middlings, bran and middlings, mixed, and low grade flour. They all consist of particular portions of the wheat berry.

According to a provision in the Feeding Stuff Law now upon the statute books of Pennsylvania, wheat and rye by-products can be legally sold in this state without any statement of analysis attached to the package. They should, however be sold as pure wheat bran, pure wheat middlings, etc., as the case may be.

Low Grade Flour.

Analyses on pages 50-53.

Low grade flour or "Red Dog," is the poorest grade of wheat flour and usually of a dark color.

AVERAGE ANALYSES AND RETAIL PRICES.

	1905.	1906.	1907.
Number of samples,	7	3	15
Crude protein,	15.51	14.38	17.07
Crude fat,	3.61	3.03	4.44
Crude fiber,	....	....	2.32
Price per ton,	$29 86	$25 66	$33 96

One notices a better quality upon the market in 1907 than that of previous year.

Wheat Middlings.

Analyses on pages 52-59.

Wheat middlings which contain some of the finest bran, is separated from the fine flour and coarse bran in bolting, and consists chiefly of the inner layers of the covering of wheat berries. Although a guarantee of valuable nutrients is not required for the legal sale of wheat middlings, yet a very large percentage of the samples analyzed were sold with guarantees for crude protein and crude fat.

AVERAGE ANALYSES AND RETAIL PRICES.

	1905.	1906.	1907.
Number of samples,	49	26	87
Crude protein,	15.23	16.64	17.17
Crude fat,	4.02	4.83	5.24
Crude fiber,	....	....	5.97
Price per ton,	$26 22	$24 17	$31 14

Mixed Feed: Wheat By-Products.

Analyses on pages 58 and 59.

Mixed feed is a term often used to cover a combination of two or more wheat offals. Most of the samples contained wheat bran and wheat middlings.

AVERAGE ANALYSES AND RETAIL PRICES.

	1905.	1906.	1907.
Number of samples,	4	5	16
Crude protein,	13.99	15.74	16.19
Crude fat,	4.43	5.10	4.91
Crude fiber,	....	....	7.49
Price per ton,	$24 75	$24 80	$29 18

Wheat Bran.

Analyses on pages 58-65.

Wheat bran consists of the three outer coverings of the wheat berry, together with the aleurone layer which is rich in protein. Bran contains less protein and more crude fiber than middlings, and on the average, a little less fat.

AVERAGE ANALYSES AND RETAIL PRICES.

	1905.	1906.	1907.
Number of samples,	59	26	75
Crude protein,	14.30	14.85	15.74
Crude fat,	4.48	4.79	5.02
Crude fiber,	....	....	9.72
Price per ton,	$23 74	$22 44	$28 66

Many samples of wheat bran contained a considerable amount of corn cockle, which contains a poisonous principal known as sapotoxin. According to reliable authorities, sapotoxin has the power of destroying the red blood corpusles, and in many instances animals have died from saponin poisoning, as a result of eating food which contained considerable cockle. In the future, any feeding stuff containing more than a mere trace of corn cockle, will be considered adulterated.

OAT BY-PRODUCTS.

Analyses on pages 64 and 65.

One sample of *Friends' Oat Feed* and two samples of *Royal Oat Feed*, both articles manufactured by The Great Western Cereal Co., Chicago, Ill., were composed largely of oat hulls. As a rule, these articles contain less protein and fat than the guarantees call for, which was also the case this year.

It is gratifying to note that materials composed principally of oat hulls, do not find so ready a sale as in previous years. *As long as the farmer can raise plenty of corn, hay and oats, he cannot afford to purchase any feeding stuff containing less than 14 per cent. of crude protein.*

MIXED FEEDS: PROPRIETARY AND OTHERWISE.

Analyses on pages 64-83.

Nearly one-third of the total number of feeds analyzed in 1907 were mixed feeds, many of which were sold under proprietary names. In the table of analyses will be found full information in regard to the results of the examination.

It is to be regretted that we found so many samples of mixed feeds adulterated with rice hulls. This fact has been mentioned in an earlier part of the bulletin, and it is sufficient, at this time, to say that this Department has, by means of publicity, been able to instruct the consumers of feeding stuffs as to the exact nature of this material. A result of this educative movement, is, we believe, that stock feeders will thoroughly investigate the nature of molasses feeds in particular, before purchasing the same. There is no doubt but that molasses feeds have considerable value as a source, not only of protein, but of carbo-hydrates, and it is a cause for regret that so many manufacturers are using molasses to disguise the presence of undesirable ingredients.

A large proportion of these samples of mixed feeds, particularly those containing molasses, were examined as to the presence of weed seeds. Nearly every molasses feed carried more or less weed seeds, some harmless but a larger proportion of which were obnoxious. These seeds were usually present in an unground condition, and upon careful examination of these well known brands of molasses feed, we found a variation from approximately two millions to seventeen millions seeds per ton.

Experiments have been carried on by certain Experiment Stations, notably the Vermont Station, which go to show that the seeds present in molasses feeds were viable, and when planted in sterilized soil, growth took place with remarkable vigor. In some brands the seeds did not grow, as they were apparently treated to destroy viability. A purchaser of a ton of one brand of these molasses feeds, purchased three weed seeds for every square foot of a one hundred acre farm. It is probably true that sheep and poultry can digest these seeds, but the digestive track of neither the horse nor the cow is able to digest them; so they pass through the alimentary canal into the manure and are scattered broadcast over the soil to produce, in course of time, a full crop of weeds.

The attention of the farmers in this Commonwealth is particularly directed to this matter, and it is to be hoped that they will *refuse to purchase any feeding stuff containing weed seeds.* Each farmer should pride himself upon the appearance of his farm, and it can never be kept free from weeds, if he persists in bringing them upon his land as an adulterant of feeding stuffs.

MISCELLANEOUS FEEDS.

Analyses on pages 82 and 83.

Two samples of *Dried Beet Pulp*, manufactured by The Alma Sugar Co., Alma, Mich., were analyzed and contained an average of 8.85 per cent. protein, .79 per cent. fat and 19.08 per cent. fiber. This article is the residue from the manufacture of beet sugar, consisting of the tissues of the beet from which the sugars and other soluble compounds have been removed by water. It naturally contains a high percentage of crude fiber, and as the protein is low, it is classed among those feeds which are not economical for the dairyman to purchase.

The list of miscellaneous feeds also included various mixtures, sold as *Bird Food*, *Pigeon Feed*, *Cat Food*, *Fish Food*, *Rye and Buckwheat Feeds*, etc., all of which are particularly mentioned in the table of analyses.

ANIMAL BY-PRODUCTS.

Analyses on pages 82-85.

Four samples analyzed were classified as animal by-products. One sample of *Three Medal Poultry Meat*, manufactured by The Berg Co., Philadelphia, Pa., contained 59.81 per cent. crude protein and 12.42 per cent. crude fat. One sample of *Animal Meal*, manufactured by The Bowker Co., New York, N. Y., contained 27.05 per cent. crude protein against a guarantee of 40 per cent. and 18.30 per cent. crude fat, with a guarantee of only 5 per cent. The collection also included a sample of *Model Beef Scraps*, made by The Model Milling Co., Buffalo, N. Y., and also a sample of *Beef Poultry Ration*, manufactured by The E. H. Shuster Co., N. Woodbury, N. J. The analysis of the former showed 61.64 per cent. crude protein, 9.03 per cent.

crude fat, and the latter, 46.74 per cent. crude protein, and 18.52 per cent. crude fat.

CONDIMENTAL STOCK AND POULTRY FOODS.

Analyses on pages 84 and 85.

Sixty six of the samples collected in 1907 were condimental stock and poultry foods, only four of which were examined, and the results appear in the following table. A more extended examination of these articles upon our markets will be made during the coming year, and the results of the work will be published in the Feeding Stuff Bulletin of 1908.

The principal ingredient of these articles is either wheat offal or linseed or cottonseed meal, to which is added special drugs like sulphur, gentian, Epsom salts, charcoal, salt, ginger, fenugreek, etc., apparently for medicinal effect. These articles are worth no more for food purposes than the feeding stuff contained therein, but the retail prices vary from $70 to $500, or more, per ton. Under no circumstances can the farmer afford to buy such materials at the prices asked. If a tonic is necessary, the farmer can make up his own much more cheaply and secure the same or better results in the use thereof.

ANALYSES OF SAMPLES OF FEEDING STUFFS COLLECTED BY SPECIAL AGENTS.

The following table (XII) shows the partial chemical analyses and results of the microscopical examination of samples of feeding stuffs collected by Special Agents of the Department of Agriculture during the year 1907. The table also gives the retail price per ton.

Owing to the fact that the new Feeding Stuff Law was approved May 28, 1907, and became operative August 1st, following, it was thought best to delay taking samples under the new act, until sufficient time had been given manufacturers and dealers in which to become familiar with the provisions of the act. Therefore, samples were not taken under the new law, until September 1, 1907. Of the total number of samples analyzed, 34 were collected prior to August 1st, the time when the new law became operative, and particular attention is called to these samples in the table of analyses. This Department, therefore, sent out a complete copy of the 1907 law to those dealers in feeding stuffs, located in Pennsylvania, whose addresses could be secured, and also to manufacturers located in the State, as well as outside of our borders.

TABLE XII.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
	OIL CAKE MEALS. *Cottonseed Meal.*			Per ct.	Per ct.	Per ct.
1111	Prime. American Cotton Oil Co., New York, N. Y.	Towanda, F. H. Hagerman,..	281	6.58	41.00	41.00
730	Choice. American Cotton Oil Co., New York, N. Y.	Downingtown, Wells & Walker.	66	8.61	37.69	41.00
617	...... H. E. Bridges & Co., Memphis, Tenn.	Lancaster, J. W. Eshleman,.	1	8.06	36.94	41.00
1073	...... H. E. Bridges & Co., Memphis, Tenn.	Gettysburg, J. G. Wolf's Sons.	253	5.40	39.69	41.00
1092	Owl Brand. F. W. Brode & Co., Memphis, Tenn.	New Milford, Shay Bros., ...	274	6.65	45.10	41.43
915	Green Diamond Brand. Chapin & Co., Buffalo, N. Y.	Greencastle, Greencastle Elevator Co.	161	6.49	39.63	41-43
897	Green Diamond Brand. Chapin & Co., Buffalo, N. Y.	Linesville, Linesville Milling Co.	129	6.98	41.50	41.00
1006	Dixie Brand. Humphreys, Godwin & Co., Memphis, Tenn.	Butler, H. J. Klingler & Co.,	165	6.99	39.00	41.00
797	Prime. Hunter Bros. Milling Co., St. Louis, Mo.	New Castle, City Roller Mills,	72	7.50	33.75	38.50
755	Eagle Brand. Roberts-Ruffin Co., Memphis, Tenn.	Reading, A. C. Wertz & Bro.	91	8.41	39.38	41.00
1033	...... J. Lindsay Wells Co., Memphis, Tenn.	Carbondale, The Carbondale Milling Co.	236	6.76	37.06	41-43
		Average, ...	....	....	39.16	....
		Average digestible, ...	....	....	32.89	....
	Linseed Meal. New Process					
872	Cleveland Flaxmeal. American Linseed Co., Chicago, Ill.	Dover, S. H. Myers, ...	142	....	37.69	36-40
825	Cleveland Flaxmeal. American Linseed Co., Chicago, Ill.	Wernersville, Geo. W. Wertz.	115	....	35.50	36-40
		Average, ...	....	....	36.59	....
		Average digestible, ...	....	....	31.10	....
	Linseed Meal, Old Process.					
719	...... American Linseed Co., New York, N. Y.	Lancaster, The Continental Feed Co.	55	8.87	35.00	32-36
618	...... American Linseed Co., New York, N. Y.	Lancaster, J. W. Eshleman,.	2	7.59	35.38	32.36
1049	Ground Linseed Cake. American Linseed Co., Minneapolis, Minn.	Kittanning, J. R. Gault & Co.	186	9.03	34.63	34-38
976	...... American Linseed Co., New York, N. Y.	Mechanicsburg, J. H. Kohler,	198	8.68	35.38	32-36
*580	...... American Linseed Co., New York, N. Y.	Harrisburg, Paxton Flour and Feed Co.	5	8.25	32.31	32-36
1082	...... American Linseed Co., New York, N. Y.	Montrose, Slatter & Roberts,.	264	9.04	35.69	32-36
843	...... American Linseed Co., New York, N. Y.	Dubois, A. T. Sprankle, ...	104	....	35.19	32-36
642	...... American Linseed Co., New York, N. Y.	Lancaster, Sprecher & Ganss,	26	7.86	35.88	32-36
902	...... The Mann Bros. Co., Buffalo, N. Y.	Grove City, Pizor Bros., ...	134	10.11	33.44	34-37
780	...... The Metzger Seed and Oil Co., Toledo, O.	Beaver Falls, Dodds & Garrett.	55	....	30.88	30-36
803	...... The Metzger Seed and Oil Co., Toledo, O.	New Castle, F. W. Hutchinson & Son.	78	....	34.13	30-36
890	...... The Metzger Seed and Oil Co., Toledo, O.	Mercer, Mercer Milling & Lumber Co.	122	9.32	33.31	30-36
929	Ground Linseed Cake. Midland Linseed Co., Minneapolis, Minn.	Newville, S. E. Shenk, ...	175	7.28	35.50	30-35
807	...... National Lead and Oil Co., Pittsburg, Pa.	Ellwood City, J. P. Morrison,	82	....	36.06	32.00
665	...... National Lead and Oil Co., Pittsburg, Pa.	Scottdale, F. V. Perry & Co.,	22	7.89	35.38	32.00

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*Sampled before August 1, 1907.
†Per cwt.

FEEDING STUFFS COLLECTED IN 1907.

Crude Fat.		Crude Fiber.		Price per ton.	Certified Composition.	Ingredients Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
8.59	9.00	8.91	....	$32 00	....	Cottonseed meal, ...	1111
9.91	9.00	10.27	....	30 60	....	Cottonseed meal, ...	730
9.41	9.00	13.15	....	31 00	Made from decorticated cotton seed.	Cottonseed meal: Large amount of seed coats.	617
6.94	9.00	10.89	....	32 00	Made from decorticated cotton seed.	Cottonseed meal, ...	1073
10.69	7-9	5.99	....	32 00	Made from decorticated cotton seed.	Cottonseed meal, ...	1092
8.17	9.00	11.70	....	32 00	....	Cottonseed meal, ...	915
13.47	9.00	5.82	....	....	....	Cottonseed meal, ...	897
8.71	9.00	10.27	....	32 00	....	Cottonseed meal, ...	1006
8.67	8.00	14.31	....	32 00	....	Cottonseed meal: Large amount of seed coats.	797
8.87	9.00	9.44	....	34 00	....	Cottonseed meal, ...	755
11.64	9-10	11.05	....	32 00	Made from decorticated cotton seed.	Cottonseed meal, ...	1033
9.55	....	10.16	....	31 90			
8.97	....	3.56					
3.82	1-3	7.67	....	33 00	....	Flaxseed meal, ...	872
2.05	1-3	8.18	....	....	....	Flaxseed meal, ...	825
2.94	....	7.93	....	33 00			
2.85	....	6.31					
6.39	5-7	8.14	....	32 00	....	Linseed oil meal, ...	719
6.84	5-7	8.98	....	31 50	....	Linseed oil meal, ...	618
7.05	5-8	8.17	....	36 00	....	Linseed oil meal, ...	1049
6.88	5-7	7.52	....	35 00	....	Linseed oil meal, ...	976
8.35	5-7	8.44	....	35 00	....	Linseed oil meal, ...	580
6.77	5-7	7.37	....	35 00	....	Linseed oil meal, ...	1082
5.78	5-7	7.54	....	....	....	Linseed oil meal, ...	843
6.99	5-7	8.32	....	32 00	....	Linseed oil meal, ...	642
6.38	6-7	7 63	4.00	36 00	....	Linseed oil meal, ...	902
7.83	5-7	9.29	2-8	33 00	....	Linseed oil meal, ...	780
8.04	5-7	7.56	....	†1 70	....	Linseed oil meal, ...	803
8.85	5-7	7.94	....	....	....	Linseed oil meal, ...	890
7.55	5-8	7.75	....	40 00	....	Linseed oil meal, ...	929
7.48	5.20	8.12	....	†2 00	....	Linseed oil meal, ...	807
6.98	5.20	8.10	....	40 00	....	Linseed oil meal, ...	665

TABLE XII.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
703	...... National Lead and Oil Co., Pittsburg, Pa.	New Brighton, Star Mills,...	36	7.78	35.69	32.00
1117	...... Louis Pfohl & Son, Buffalo, N. Y.	Wellsboro, G. C. & F. A. Brooks.	287	7.44	35.69	33.40
1135	Ground Oil Cake. Red Wing Linseed Mills, Red Wing, Minn.	Carlisle, S. B. Jackson, ...	305	5.63	35.13	30.00
647	...... Scobie & Parker, Pittsburg, Pa.	Greensburg, J. W. Pollins & Co.	4	6.51	35.94	....
656	...... Thompson & Co., Allegheny, Pa.	Greensburg, W. N. Davis,...	13	7.18	34.56	32–37.5
698	...... Thompson & Co., Allegheny, Pa.	Rochester, Karcher Bros.,...	31	8.38	35.44	....
*602	...... Thompson & Co., Allegheny, Pa.	Washington, G. W. McBrier,.	23	6.80	36.31	32-37.5
*590	...... Thompson & Co., Allegheny, Pa.	Rices Landing, Thomas McGee.	11	9.17	34.31	32-37.5
		Average, ...	....	....	34.75	....
		Average digestible, ...	....	....	30.93	....
	DISTILLERY AND BREWERY BY-PRODUCTS.					
	Distillers' Grains.					
925	Ajax Flakes. Ajax Milling & Feed Co., New York, N. Y.	Shippensburg, Wenger & Wadel.	171	3.63	28.25	33.00
870	.Ajax Flakes. Chapin & Co., Philadelphia, Pa.	Dover, W. S. Eppley, ...	140	6.89	31.06	33-35
726	Ajax Flakes. Chapin & Co., Philadelphia, Pa.	Parkesburg, Brinton Walter,.	62	10.67	29.45	33-35
1132	Fourex Grains. The J. W. Biles Co., Cincinnati, O.	Mansfield, C. S. Kingsley & Co.	302	3.13	31.38	33.00
756	Fourex Grains. The J. W. Biles Co., Cincinnati, O.	Reading, A. C. Wertz & Bro.	92	6.36	33.56	33.00
806	Corn Protegran. The Dewey Bros., Blanchester, O.	Ellwood City, J. P. Morrison,	81	7.98	23.19	....
883	Corn Protegran. The Dewey Bros., Blanchester, O.	Butler, Geo. Walter & Sons,.	115	6.95	25.75	33.00
963	Blue Ribbon Corn Grains. C. A. Krause Grain Co., Milwaukee, Wis.	Mechanicsburg, A. B. Harnish.	185	4.41	27.19	33.00
		Average, ...	....	....	28.73	....
		Average digestible, ...	....	....	20.97†	....
	Brewers' Grains.					
1083	...... Anheuser-Busch Brewing Assoc., St. Louis, Mo.	Montrose, Slatter & Roberts,	265	6.28	26.25	26.00
666	...... Indiana Brewing Co., Indiana, Pa.	Mount Pleasant, O. P. Shupe.	23	7.92	25.81	18-19
932	...... Johnstown Dry Grains Co., Johnstown, Pa.	Johnstown, Swope Bros.,....	140	6.39	26.69	24.00
938	...... Johnstown Dry Grains Co., Johnstown, Pa.	Johnstown, John Widman,...	146	4.37	28.50	24.00
1000	...... Reichard & Weaver, Wilkes-Barre, Pa.	Wilkes-Barre, Reichard & Weaver.	223	4.10	28.00	....
999	...... Stegmaier Brewing Co., Wilkes-Barre, Pa.	Wilkes-Barre, Stegmaier Brewing Co.	222	5.70	22.81	23.70
		Average, ...	....	....	26.34	....
		Average digestible, ...	....	....	21.34	....
	Malt Sprouts.					
820	...... Atlantic Export Co. of Wis., Milwaukee, Wis.	Reading, G. M. Krick, ...	110	8.92	24.13	25.00
1084	...... Atlantic Export Co. of Wis., Milwaukee, Wis.	Montrose, Slatter & Roberts,.	266	5.61	24.56	25.00
828	...... Francis Duhne, Jr., Milwaukee, Wis.	Birdsboro, F. M. Brown,......	118	6.85	28.50	25.00
731	...... Francis Duhne, Jr., Milwaukee, Wis.	Coatesville, P. D. Handwork Co., Ltd.	67	....	26.63	25.00
727	...... E. P. Mueller, Milwaukee, Wis.	Pomeroy, M. T. Phillips,....	63	9.83	26.06	....

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*Sampled before August 1, 1907.
†Per 147 pounds.

FEEDING STUFFS COLLECTED IN 1907—Continued.

Crude Fat.		Crude Fiber.					
Found.	Guaranteed.	Found.	Guaranteed.	Price per ton.	Certified Composition.	Ingredients Identified by Microscopical Examination.	Chief Chemist's number.
Per ct.	Per ct.	Per ct.	Per ct.				
6.75	5.20	8.01	....	$37 50	....	Linseed oil meal, ...	703
7.05	6.96	7.79	....	40 00	....	Linseed oil meal, ...	1117
7.64	6.00	8.92	....	35 00	....	Linseed oil meal, ...	1135
7.19	....	8.31	....	40 00	....	Linseed oil meal, ...	647
6.94	5.5-8.5	9.42	....	40 00	....	Linseed oil meal, ...	656
7.47	....	8.32	....	37 50	....	Linseed oil meal, ...	698
7.16	5.5-8.5	....	....	40 00	....	Linseed oil meal, ...	602
7.90	5.5-8.5	....	....	40 00	....	Linseed oil meal, ...	590
7.23 6.43	....	8.17 4.66	....	36 57			
14.28	12.00	12.71	14.00	30 00	....	Distillers' grains (largely corn).	925
12.65	12.00	11.22	....	33 00	....	Distillers' grains (largely corn).	870
13.30	12.00	10.87	....	28 00	....	Distillers' grains (largely corn).	726
13.14	11.00	13.14	....	33 00	....	Distillers' grains (largely corn).	1132
13.76	11.00	5.74	....	31 00	....	Distillers' grains (largely corn).	756
8.53	....	10.94	....	26 00	....	Distillers' grains (largely corn).	806
10.89	14.00	9.18	....	32 00	....	Distillers' grains (largely corn).	883
7.53	11 00	15.27	....	27 00	....	Distillers' grains (largely corn).	963
11.76 11.17	....	11.13 10.57	....	30 00			
6.45	6.00	13.88	....	26.00	....	Brewers' grains (barley tissues).	1083
7.50	5-6	13.02	13-16	25 00	....	Brewers' grains (barley tissues).	666
7.17	6.71	12.84	11.00	23 00	....	Brewers' grains (barley tissues).	932
7.75	6.71	12.69	11 00	†1 84	....	Brewers' grains (barley tissues).	938
7.90	....	13.59	....	20 00	Malt and meal, ...	Brewers' grains (barley and corn tissues).	1000
7.05	6.30	13.48	16.25	20 00	Barley malt and brewers' corn.	Brewers' grains (barley and corn tissues).	999
7.30 6.50	....	13.25 6.49	....	22 80			
1.62	2.00	14.06	....	26 00	....	Malt sprouts, ...	820
1.44	2.00	12.97	11.00	27 00	....	Malt sprouts, ...	1084
1.41	2.00	11.71	....	25 00	....	Malt sprouts, ...	828
2.53	2.00	9.82	15.00	25 00	....	Malt sprouts, oats and barley.	731
2.55	....	12.25	....	19 50	....	Malt sprouts, barley and barley hulls.	727

TABLE XII.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
764	...... Reingans-Wolff Grain Co., Milwaukee, Wis.	Reading. W. T. Snyder, ...	100	8.77	26.50	25.50
		Average, ...	....	....	26.06	....
		Average digestible, ...	....	....	20.33	....
	MAIZE BY-PRODUCTS. *Gluten Feed.*					
627	Buffalo Brand. Corn Products Mfg. Co., Chicago, Ill.	Manheim, D. M. Baker, ...	11	6.78	23.69	....
1001	Buffalo Brand. Corn Products Mfg. Co., Chicago, Ill.	Nanticoke, Bergin & Co.,....	224	6.26	23.81	23-25
829	Buffalo Brand. Corn Products Mfg. Co., Chicago, Ill.	Birdsboro, F. M. Brown, ...	119	....	25.88	23-25
670	Buffalo Brand.* Corn Products Mfg. Co., Chicago, Ill.	Manheim, B. R. Hollinger,...	30	8.71	23.63	25-27
1007	Buffalo Brand. Corn Products Mfg. Co., Chicago, Ill.	Butler, H. J. Klingler & Co.,	166	6.70	24.31	23-25
629	Buffalo Brand. Corn Products Mfg. Co., Chicago, Ill.	Manheim, Manheim Milling Co.	13	7.56	25.63	23-25
742	Buffalo Brand. Corn Products Mfg. Co., Chicago, Ill.	Mortonville, Monholland & Dale.	78	....	22.31	23-25
†581	Buffalo Brand. Corn Products Mfg. Co., Chicago, Ill.	Harrisburg, Paxton Flour and Feed Co.	6	8.00	24.31	23-25
904	Buffalo Brand. Corn Products Mfg. Co., Chicago, Ill.	Grove City, Pizor Bros., ...	136	6.43	25.00	23-25
1009	Buffalo Brand. Corn Products Mfg. Co., Chicago, Ill.	Butler, B. F. Shannon & Co.	168	5.64	27.88	24.00
884	Buffalo Brand. Corn Products Mfg. Co., Chicago, Ill.	Butler, Geo. Walters & Sons,	116	6.30	24.06	23-25
		Average, ...	....	....	24.59	....
		Average digestible, ...	....	....	20.90	....
1037	Pekin Brand. Corn Products Mfg. Co., Chicago, Ill.	Jermyn, H. L. Freas & Son,.	240	5.71	27.19	23-24
1087	Pekin Brand. Corn Products Mfg. Co., Chicago, Ill.	Montrose, L. T. Harrower,...	269	7.34	25.81	23-25
		Average, ...	....	....	26.50	....
		Average digestible, ...	....	....	22.53	....
710	...... Corn Products Mfg. Co., Chicago, Ill.	Freedom, Linnenbrink & Mengel.	43	8.87	25.31	....
		Digestible, ...	....	....	21.51	....
854	Warner Brand. Corn Products Refining Co., Chicago, Ill.	Emigsville, Brillinger & Swartz.	124	....	24.56	....
1048	Warner Brand. Corn Products Refining Co., Chicago, Ill.	Kittanning, J. A. Gault & Co.	185	8.63	25.81	24.00
896	Warner Brand. Corn Products Refining Co., Chicago, Ill.	Linesville, Linesville Milling Co.	123	7.02	24.69	24.00
		Average, ...	....	....	25.02	....
		Average digestible, ...	....	....	21.27	....
721	Illinois Brand. Jonas F. Eby & Son, Lancaster, Pa.	Parkesburg, Brinton Walter,	57	11.10	11.63	15.00
723	Illinois Brand. Jonas F. Eby & Son, Lancaster, Pa.	Parkesburg, Brinton Walter,	59	10.71	11.50	13.5-17
		Average, ...	....	....	11.57	....
678	P. Bro. Brand.‡ Piel Bros. Starch Co., Indianapolis, Ind.	Gap, J. C. Walker & Sons Co.	38	7.68	19.69	27.60
		Digestible, ...	....	....	16.74	....

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*Statement of dealer.
†Sampled before August 1, 1907.
‡Improperly guaranteed on moisture-free basis.

FEEDING STUFFS COLLECTED IN 1907—Continued.

Crude Fat.		Crude Fiber.		Price per ton.	Certified Composition.	Ingredients Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
2.71	1.00	13.16	....	$26 00	....	Malt sprouts,	764
2.04 1.92	....	12.33 8.26	....	24 75			
3.22	....	7.07	....	28 00	....	Gluten feed,	627
4.17	2.50	6.86	....	33 00	....	Gluten feed,	1001
4.06	2.50	6.23	8.50	30 00	....	Gluten feed,	829
5.10	3.00	6.93	....	26 00	....	Gluten feed,	670
4.56	2.50	7.86	8.50	32 00	....	Gluten feed,	1007
4.08	2.50	7.01	8.50	28 00	....	Gluten feed,	629
4.30	2.50	6.83	8.50	30 00	....	Gluten feed,	742
2.78	2.50	7.79	....	28 00	....	Gluten feed,	581
3.85	2.50	6.99	....	33 00	....	Gluten feed,	904
3.13	2.50	7.08	....	32 00	....	Gluten feed,	1009
4.68	2.50	7.77	....	32 00	....	Gluten feed,	884
3.99 3.31	....	7.13 5.42	....	30 18			
3.92	2.50	7.50	....	31 00	....	Gluten feed,	1037
3.43	2.50	7.01	....	30 00	....	Gluten feed,	1087
3.68 3.05	....	7.26 5.52	....	30 50			
2.76	....	6.60	....	30 00	....	Gluten feed,	710
2.29	....	5.62	....	....	....		
2.02	....	6.25	....	30 00	....	Gluten feed,	854
3.74	2.50	10.20	....	29 00	....	Gluten feed,	1048
3.27	2.50	6.27	....	30 00	....	Gluten feed,	896
3.01 2.50	....	7.57 5.75	....	29 67			
2.69	3.00	4.32	....	28 00	....	Gluten feed. Large amount of corn starch present and artificially colored.	721
3.55	3.5-5	5.06	....	28 00	....	Gluten feed. Large amount of corn starch present and artificially colored.	723
3.12	....	4.69	....	28 00			
3.86	2.60	7.06	....	31 00	....	Gluten feed,	678
3.20	....	5.37					

TABLE XII.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
814	...... St. Louis Syrup and Preserving Co., St. Louis, Mo.	Sharon, W. J. Kennedy, ...	89	8.98	25.13	25.00
		Digestible, ...	....	....	21.36	....
745	Union Brand. Union Starch & Refining Co., Edinburg, Ind.	Timicula, David Brinton, ...	81	....	21.40	24.00
		Digestible, ...	....	....	18.19	....
873	Wellington Brand. Wellington Starch Co., Decatur, Ill.	York, John Keasey & Sons,..	143	9.20	11.25	15.00
712	...... Unknown, ...	Rochester, J. A. Lutz, ...	45	7.84	26.13	....
1130	...... Unknown, ...	Mansfield, R. W. & M. F. Rose Co.	300	5.09	20.00	....
		Average of last two analyses,	....	....	23.07	....
		Average digestible, ...	....	....	19.61	....
		Average analysis of gluten feeds.*	....	....	24.37	....
		Average digestible,*	....	....	20.71	....
	Hominy Feed.					
628	...... American Hominy Co., Indianapolis, Ind.	Manheim, D. M. Baker, ...	12	7.56	8.31	....
855	...... M. F. Baringer, Philadelphia, Pa.	Emigsville, Brillinger & Swartz.	125	....	10.31	9-11
743	...... Buffalo Cereal Co., Buffalo, N. Y.	Timicula, David Brinton,....	79	....	10.88	10.50
1026	...... G. W. Engle, Hazleton, Pa.	Hazleton, Schweppenheiser & Son.	229	7.40	9.63	6.00
681	Evans Brand. Evans Milling Co., Indianapolis, Ind.	Paradise, Samuel Eby & Son,	41	9.41	10.69	11-12
965	...... Evans Milling Co., Indianapolis, Ind.	Mechanicsburg, A. B. Harnish.	187	7.52	11.13	11.00
979	...... Evans Milling Co., Indianapolis, Ind.	Mechanicsburg, J. H. Kohler,	201	6.64	11.88	11.00
679	...... Evans Milling Co., Indianapolis, Ind.	Gap, J. C. Walker & Sons Co.	39	8.35	11.13	11.00
682	...... W. H. Haskell & Co., Toledo, O.	Leaman Place, H. K. Hershey.	42	4.54	10.00	10.25
674	...... Brinton Walter, Parkesburg, Pa.	Christiana, B. F. Walter,....	34	8.16	7.38	....
		Average, ...	....	....	10.13	....
		Average digestible, ...	....	....	6.58	....
	Corn Feed Meal.					
1101	...... The American Cereal Co., Chicago, Ill.	Leechburg, D. Gosser & Sons.	213	6.84	10.63	8.5-10.5
1014	...... The American Cereal Co., Chicago, Ill.	Butler, Lecdom, Worrall & Co.	173	9.26	10.63	8.5-10.5
697	...... The American Cereal Co., Chicago, Ill.	West Bridgewater, W. W. McCullough.	30	9.70	10.50	8.5-10.5
941	...... The American Cereal	Johnstown, John Widman,...	149	7.19	9.56	8.5-10.5
846	Feed Meal. The Toledo Grain & Milling Co., Toledo, O.	Dubois, S. A. Eiseman, ...	107	....	8.38	7.5-9.0
		Average, ...	....	....	9.94	....
	WHEAT OFFALS. *Low Grade Flour.*					
1066	Red Dog Flour. Bay State Milling Co., Winona, Minn.‡	Foxburg, Keystone Supply Co.	203	10.41	17.94	....
935	Badger Red Dog Flour. Berger-Crittenden Milling Co., Co., Chicago, Ill. Milwaukee, Wis.	Johnstown, McDermot, Wertz & Co.	143	11.41	17.91	18.00
987	Red Dog Flour. L. Christian & Co., Minneapolis, Minn.‡	Plymouth, O. N. Jones, ...	209	11.44	15.38	....
754	Red Dog Flour. L. Christian & Co., Minneapolis, Minn.	Reading, A. C. Wertz & Bro.,	90	10.64	17.25	20.00

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*Excluding Nos. 721, 723 and 873.
†Per 90 pounds.
‡Statement of dealer.

FEEDING STUFFS COLLECTED IN 1907—Continued.

Crude Fat.		Crude Fiber.					
Found.	Guaranteed.	Found.	Guaranteed.	Price per ton.	Certified Composition.	Ingredients Identified by Microscopical Examination.	Chief Chemist's number.
Per ct.	Per ct.	Per ct.	Per ct.				
2.77	2.75	6.70	7.00	$32 00	....	Gluten feed, ...	814
2.30	....	5.09	....	....	....		
5.43	3.00	6.70	6.30	31 00	....	Gluten feed, ...	745
4.50	....	5.09	....	....	....		
2.28	3.00	4.11	....	30 00	....	Gluten feed, ...	873
3.47	....	7.89	....	28.00	....	Gluten feed, ...	712
5.05	....	8.03	....	32 00	....	Gluten feed, ...	1130
4.26	....	7.96					
3.54	....	6.05					
3.80	....	7.21	....	30 27			
3.15	....	5.48					
6.16	....	9.46	....	28 00	....	Corn product, ...	628
7.80	5-8	3.18	7.00	32 00	....	Corn product, ...	855
8.60	8.50	4.23	....	32 00	....	Corn product, ...	743
3.62	1.20	1.95	1.10	†1 40	....	Corn product, ...	1026
9.88	7.5-10	5.35	....	30 00	....	Corn product, ...	681
9.70	9.00	4.97	....	31 00	....	Corn product, ...	965
9.85	9.00	5.51	....	32 00	....	Corn product, ...	979
10.39	9.00	5.54	....	31 00	....	Corn product, ...	679
7.88	8.10	4.22	....	36 00	....	Corn product, ...	682
5.66	....	6.41	....	29 00	....	Corn product, ...	674
7.95	....	5.08	....	31 22			
7.31	....	3.40					
6.35	3-5	3.20	....	32 00	....	Corn product, ...	1101
6.80	3-5	3.45	....	30 00	....	Corn product, ...	1014
7.48	3-5	4.43	....	30 00	....	Corn product, ...	697
5.85	3-5	2.99	....	32 00	....	Corn product, ...	941
3.52	3.5-4.5	3.95	....	33 00	....	Corn product, ...	846
6.00	....	3.60	....	31 40			
5.57	....	1.81	....	33 00	....	Red Dog flour, ...	1066
3.92	4.00	4.25	....	33 50	....	Red Dog flour, ...	935
3.20	....	1.61	....	36 00	....	Red Dog flour, ...	987
4.35	4.50	3.05	2.00	34 00	....	Red Dog flour, ...	754

TABLE XII.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein. Found.	Crude Protein. Guaranteed.
				Per ct.	Per ct.	Per ct.
1104	Red Dog Flour. Dilworth Bros., Pittsburg, Pa.*	Vandergrift, Wright & Rowley.	216	9.49	17.38	....
944	Red Dog Flour. Dwight Flour Mills, Minneapolis, Minn.	Conemaugh, F. B. Custer & Bros.	152	10.94	17.75	15-17
894	Red Dog Flour. Dwight Flour Mills, Minneapolis, Minn.	Linesville, Linesville Coal, Lime and Cement Co.	126	11.20	16.19	15-17
1013	Superb Red Dog Flour. Eagle Roller Mill Co., New Ulm, Minn.	Butler, Leedom, Worrall & Co.	172	10.22	18.13	18.57
1112	Eclipse Red Dog Flour. Elysian Milling Co., Elysian, Minn.	Towanda, F. H. Hagerman, ..	282	11.78	15.75	15.20
1062	Extra Red Dog Flour. La Grange Mills, Red Wing, Minn.	East Brady, S. C. Wallace & Son.	199	11.11	17.63	17.00
837	Elmco Red Dog Flour. Listman Mill Co., La Crosse, Wis.	Punxsutawney, ...	98	11.90	17.69	19.57
1090	Red Dog Flour. G. Q. Moon & Co., Binghamton, N. Y.	New Milford, H. B. Carpenter & Co.	272	11.04	16.25	....
934	Fancy. Sheffield-King Milling Co., Minneapolis, Minn.	Johnstown, Swope Bros., ...	142	10.44	16.44	....
937	Fancy. Sheffield-King Milling Co., Minneapolis, Minn.	Johnstown, John Widman, ...	145	10.31	16.44	....
985	Red Dog Flour. Star and Crescent Milling Co., Chicago, Ill.	Plymouth, M. J. Mras, ...	207	10.98	17.85	15.50
		Average, ...	....	....	17.07	....
		Average digestible, ...	....	....	13.14	....
	Wheat Middlings.					
945	Flour Middlings. Ankeney & Co., Minneapolis, Minn.*	Conemaugh, F. B. Custer & Bros.	153	10.25	16.38	....
1065	Winona. Bay State Milling Co., Winona, Minn.	Foxburg, Keystone Supply Co.	202	8.31	17.69	17.00
778	Brown. Bay State Milling Co., Winona, Minn.	Beaver Falls, M. W. McCandless.	53	....	19.06	14-18
977	Badger Standard. Berger-Crittenden Milling Co., Milwaukee, Wis.	Mechanicsburg, J. H. Kohler,	199	7.14	20.00	16.50
1121	...... The Birkett Mills, Penn Yan, N. Y.	Wellsboro, B. Shrader & Son.	291	7.02	16.31	....
739	...... Brandt & Stehman, Mount Joy, Pa.	Marietta, J. F. O'Brien, ...	75	....	13.94	....
1124	...... Brooks Elevator Co., Minneapolis, Minn.	Knoxville, Knoxville Tobacco Co.	294	10.25	16.75	15-17
1041	Gopher. Brooks Elevator Co., Minneapolis, Minn.	Scranton, C. P. Matthews & Sons.	244	8.78	17.19	16.00
998	Gopher. Brooks Elevator Co., Minneapolis, Minn.	Wilkes-Barre, Robbins Milling Co.	221	9.85	15.31	16.00
1119	...... G. C. & F. A. Brooks, Wellsboro, Pa.	Wellsboro, G. C. & F. A. Brooks.	289	9.18	16.25	....
1053	White. Geo. C. Christian, Minneapolis, Minn.	Kittanning, Wm. Gates, ...	190	10.49	16.94	19.00
1022	White. Geo. C. Christian, Minneapolis, Minn.	Butler, C. H. Miller & Co., ..	182	9.32	16.63	19.00
1023	Poland. Geo. C. Christian, Minneapolis, Minn.	Butler, C. H. Miller & Co., .	183	8.46	16.81	18.00
1003	Standard. L. Christian & Co., Minneapolis, Minn.	Nanticoke, Bergin & Co., ...	226	6.04	17.69	18.00
1019	Standard. L. Christian & Co. Minneapolis, Minn.	Mars, W. J. Kennedy Hardware Co.	179	9.36	17.56	18.00
1105	Choice. L. Christian & Co., Minneapolis, Minn.	Apollo, W. H. Carnahan Co., .	217	6.97	17.56	17.00
747	...... Columbia Milling Co., Columbia, Pa.	Columbia, Columbia Milling Co.	83	....	16.63	10.00
1070	Coarse. Commercial Milling Co., Cleveland, O.*	Ford City, The Thomas Flynn Co.	207	6.58	18.50	....
1134	...... Coppes, Zook & Mutschler Co., Nappanee, Ind.	Carlisle, S. B. Jackson, ...	304	8.91	16.94	17.21

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*Statement of dealer.
*Per cwt.

FEEDING STUFFS COLLECTED IN 1907—Continued.

Crude Fat.		Crude Fiber.					
Found.	Guaranteed.	Found.	Guaranteed.	Price per ton.	Certified Composition.	Ingredients Identified by Microscopical Examination.	Chief Chemist's number.
Per ct.	Per ct.	Per ct.	Per ct.				
4.48	....	3 00	....	....	....	Red Dog flour, ...	1104
5.37	4-5	3.66	8.00	$34 00		Red Dog flour, ...	941
4.67	4-5	2.92	8.00	33 00	....	Red Dog flour, ...	894
5.15	5.62	2.99	....	31 00	....	Red Dog flour, ...	1013
3.66	3.40	1.86	....	32 00	....	Red Dog flour, ...	1112
4.68	3.00	1.92	....	†1 90	Pure wheat product, ...	Red Dog flour, ...	1062
4.10	5 .93	1.32	....	34 00	....	Red Dog flour, ...	837
4.31	....	1.11	....	36 00	....	Red Dog flour, ...	1090
4.35	....	1.28	....	34 00	....	Red Dog flour, ...	931
4.32	....	1.63	....	31 00	....	Red Dog flour, ...	937
4.45	5.50	2.37	3.50	40 00	....	Red Dog flour, ...	985
4.44	....	2.32	....	33 96			
3.91	....	.70					
5.18	....	5.13	....	32 00	....	Wheat middlings, ...	945
6.11	5.75	8.43	8.00	32.00	....	Wheat middlings, ...	1065
6.27	3-5	8.62	5.8	35 00	....	Wheat middlings, ...	778
5.13	4.00	7.51	....	31 00	....	Wheat middlings, ...	977
6.00	....	5.26	....	31 00	....	Wheat middlings, ...	1121
3.18	....	2.33	....	32 00	....	Wheat middlings, ...	739
5.68	3-5	8.81	3-5	30 00	....	Wheat middlings, ...	1124
5.79	5.00	8.37	....	31 00	....	Wheat middlings, ...	1041
5.63	5.00	7.92	....	31 00	....	Wheat middlings and tissucs of weed seeds.	998
4.53	....	4.49	....	35 00	Pure wheat middlings,....	As certified, ...	1119
5.07	4.30	5.57	6.00	32 00	Pure wheat, ...	Wheat middlings, ...	1053
5.20	4.30	6.13	6.00	31 00	Pure wheat, ...	Wheat middlings, ...	1022
5.79	4.00	8.45	8.00	30 00	Pure wheat, ...	Wheat middlings, ...	1023
5.54	4.00	7.06	8.00	31 00	....	Wheat middlings, ...	1003
5.46	4.00	7.33	8 .00	28 00	....	Wheat middlings, ...	1019
5.19	5.00	5.67	....	32 00	....	Wheat middlings, ...	1105
4.71	4.00	4.06	90.00	28 00	....	Wheat middlings, ...	747
5.85	......	6 37	....	....	....	Wheat middlings, ...	1070
5.12	4.75	5.42	....	30 00	Pure middlings, ...	Wheat middlings, ...	1134

TABLE XII.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
1071	...... Coppes, Zook & Mutschler Co., Nappanee, Ind.	Gettysburg, J. G. Wolf & Sons.	251	8.26	17.38	17.21
948	Fine. Crescent Milling Co., Minneapolis, Minn.	Johnstown, John Thomas & Sons.	156	8.99	18.81	17.62
1002	Special. Crosby Roller Milling Co., Topeka, Kan.	Nanticoke, Bergin & Co.,....	225	9.51	16.69	....
895	Flour Middlings. Dwight Flour Mills, Minneapolis, Minn.	Linesville, Linesville Coal, Lime and Cement Co.	127	10.61	15.75	15-17
687	Occidental Flour Middlings. J. F. Eby & Son, Lancaster, Pa.	Ephrata, John R. Royer,....	47	9.47	16.19	14-17
818	...... Eckhart & Swan Milling Co., Chicago, Ill.	So. Sharon, Slater & Custard,	93	....	16.56	15-18
1100	White No. 8. Flint Mill Co., Milwaukee, Wis.	Leechburg, D. Gosser & Sons.	212	6.88	18.81	14-18
898	...... Flint Mill Co., Milwaukee, Wis.	Linesville, Linesville Milling Co.	130	9.30	16.63	....
858	Snow Ball. The Gardner Mill, Hastings, Minn.	Emigsville, Brillinger & Swartz.	128	....	17.06	16.50
1103	Snow Ball. The Gardner Mill, Hastings, Minn.	Leechburg, Stull, Hill, Coulter & Co.	215	7.36	17.19	16.80
926	Red and White Shorts. J. G. Ginter, Newville, Pa.	Newville, S. E. Shenk, ...	172	10.18	16.13	....
713	...... The Goshen Milling Co., Goshen, Ind.	Monaca, Allen Davidson, ...	46	9.90	16.13	15.60
952	...... The Isaac Harter Milling Co., Toledo, O.	Johnstown, Penn Traffic Co.,.	160	7.56	17.88	15-16
1077	...... The Isaac Harter Milling Co., Toledo, O.	Gettysburg, Col. E. Spangler,	257	7.13	18.38	15-16
924	...... The Isaac Harter Milling Co., Toledo, O.	Shippensburg, Wenger & Wadel.	170	8.82	17.56	15-16
783	...... The Hicks-Brown Milling Co., Mansfield, O.	Baden, N. Martin, ...	58	....	16.69	14-16
†577	...... John Hoffer Flouring Mill Co., Steelton, Pa.	Harrisburg, C. F. Gohl,.....	2	10.80	15.94	18.81
928	...... John Hoffer Flouring Mill Co., Steelton, Pa.	Newville, S. E. Shenk, ...	174	10.09	17.50	....
927	Red Shorts. John Hoffer Flouring Mill Co., Harrisburg, Pa.	Newville, S. E. Shenk, ...	173	4.80	18.31	....
981	Red Shorts. Hoffer & Garman, Brandtsville, Pa.	Mechanicsburg, D. J. Beitzel,	203	9.11	16.25	....
684	...... The Hunter Bros. Milling Co., St. Louis, Mo.	Ephrata, Ephrata Coal and Lumber Co.	44	10.31	15.56	16.00
1057	...... The Hunter Bros. Milling Co., St. Louis, Mo.	East Brady, Wm. Fairlie,....	194	9.50	16.13	16.00
1080	...... The Hunter Bros. Milling Co., St. Louis, Mo.	Montrose, J. C. Harrington,..	262	6.39	19.81	....
799	Eagle. J. B. A. Kern & Sons, Milwaukee, Wis.	New Castle, J. S. Brown's Son.	74	....	17.31	16.00
640	Shorts. Jas. L. King, West Chester, Pa.	Lititz, A. G. Hershey, ...	24	7.70	15.94	12-16
1061	Fine. La Grange Mills, Red Wing, Minn.	East Brady, S. C. Wallace & Son.	198	8.69	18.94	18.00
917	...... W. B. Lehman, Reid, Md.	Greencastle, J. R. Davison,..	163	9.55	18.56	....
1056	Standard. Listman Mill Co., La Crosse, Wis.	Kittanning, G. W. Fennell,...	193	7.13	18.94	20-22
1008	Elmco *Standard. Listman Mill Co., La Crosse, Wis.	Butler, B. F. Shannon & Co.,	167	7.98	19.19	20-22
1039	Castle Rock. C. Manegold Milling Co., Milwaukee, Wis.	Scranton, The Babcock Co.,..	242	11.44	17.56	17.00
860	Clover Leaf Flour Middlings. The Millers Products Co., Chicago, Ill.	Mt. Wolf, G. H. Wolf's Sons,	130	....	17.13	14-18
1011	Gopher Brand. Montevideo Roller Mills Co., Montevideo, Minn.	Butler, B. F. Shannon & Co.,	170	8.09	19.00	19.02

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*Per cwt.

†Sampled before August 1, 1907.

FEEDING STUFFS COLLECTED IN 1907—Continued.

Crude Fat.		Crude Fiber.					
Found.	Guaranteed.	Found.	Guaranteed.	Price per ton.	Certified Composition.	Ingredients Identified by Microscopical Examination.	Chief Chemist's number.
Per ct.	Per ct.	Per ct.	Per ct.				
5.08	4.75	4.98	....	$30.00	Pure middlings,	Wheat middlings,	1071
5.93	5.36	6.92	....	32 00	....	Wheat middlings,	948
4.43	....	3.89	....	....	....	Wheat middlings,	1002
4.98	4-5	6.04	8.00	32 00	....	Wheat middlings,	895
5.57	3-5	8.32	....	31 00	....	Wheat middlings,	687
4.71	3-5	6.95	....	*1 75	....	Wheat middlings,	818
6.36	3.50	6.22	....	32 00	....	Wheat middlings,	1100
5.20	....	8.62	....	30 00.	Pure wheat product,	Wheat middlings,	898
5.40	5.30	5.13	....	32 00	....	Wheat middlings,	858
5.49	5.30	6.76	....	33 00	Pure and unadulterated wheat midddlings.	Wheat middlings,	1103
4.23	....	3.86	....	31 00	....	Wheat middlings,	926
4.13	4.00	5.42	....	30 00	....	Wheat middlings,	713
5.09	4.5	5.32	....	*1 70	....	Wheat middlings,	952
5.71	4-5	5.75	....	30 00	....	Wheat middlings,	1077
4.93	4-5	5.52	....	30 00	....	Wheat middlings,	924
5.13	4-6	6.02	....	28 00	....	Wheat middlings,	783
4.30	4.59	3.12	....	28 00	....	Wheat middlings,	577
4.83	....	2.94	....	32 00	....	Wheat middlings,	928
5.53	....	7.32	....	30 00	....	Wheat middlings,	927
4.89	....	4.42	....	31 00	....	Wheat middlings,	981
3.80	4.00	3.52	....	30 00	....	Wheat middlings,	684
4.72	4.00	4.04	....	31 00	Pure wheat middlings,	As certified,	1057
5.46	....	6.57	....	30 00	....	Wheat middlings,	1080
5.78	4.00	7.15	....	30 00	....	Wheat middlings,	799
5.08	2-5	8.22	....	28 00	Pure wheat shorts and unadulterated.	Wheat shorts and weed seed tissues.	640
6.33	4.80	6.10	....	*1 75	Pure and unadulterated wheat.	Wheat middlings,	1061
5.43	....	3.49	....	30 00	....	Wheat middlings,	917
5.62	6.56	8.09	....	*1 60	Pure and unadulterated,	Wheat middlings,	1056
5.68	6.56	8.37	....	30 00	Pure and unadulterated,	Wheat middlings,	1008
3.67	4.00	1.75	....	35 00	....	Wheat middlings,	1039
4.94	4-8	5.84	....	32 00	....	Wheat middlings,	860
6.09	5.01	5.94	....	31 00	....	Wheat middlings,	1011

TABLE XII.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
1089	Home Made. Geo. Q. Moon & Co., Binghamton, N. Y.	New Milford, H. B. Carpenter & Co.	271	7.05	16.25	....
1096	Hardenberg's Choice. National Milling Co., Minneapolis, Minn.	Leechburg, Leechburg Milling Co.	208	8.71	16.88	16-18
1063	Go-Far. New Prague Flouring Mill Co., New Prague, Minn.	Parker's Landing, A. Affolter.	200	9.73	17.06	16.00
1059	Go-Far. New Prague Flouring Mill Co., New Prague, Minn.	East Brady, Wm. Fairlie,....	196	10.42	17.38	16.00
960	Go-Far. New Prague Flouring Mill Co., New Prague, Minn.	Shiremanstown, J. R. Miller's Sons.	182	9.20	18.13	16.00
971	Go-Far. New Prague Flouring Mill Co., New Prague, Minn.	West Fairview, H. W. Neidigh.	193	9.54	17.75	16.00
908	Go-Far. New Prague Flouring Mill Co., New Prague, Minn.	Mt. Joy, E. H. Risser;	154	8.54	18.44	....
1028	...... Northwestern Consolidated Milling Co., Minneapolis, Minn.	Hazleton, Geo. W. Engle,....	231	9.47	20.00	12.00
991	XXX Comet. Northwestern Consolidated Milling Co., Minneapolis, Minn.	Plymouth, Miner-Hillard Milling Co.	213	10.36	18.88	20.25
646	...... Northwestern Consolidated Milling Co., Minneapolis, Minn.	Greensburg, J. W. Pollins & Co.	3	7.02	16.62	16.75
942	...... Northwestern Elevator & Mill Co., Toledo, O.	Johnstown, G. Bostert & Son,	150	8.42	17.06	15-17
673	...... Pennock & Brosius, Avondale, Pa.	Christiana, B. F. Walter,....	33	12.06	14.38	14-16
1054	Brown. Pillsbury Flour Mills Co., Minneapolis, Minn.*	Kittanning, G. W. Fennell,.	191	9.93	16.13	....
939	B. Pillsbury Flour Mills Co., Minneapolis, Minn.	Johnstown, John Widman,...	147	8.09	16.69	14-18
692	Winter. G. P. Plant Milling Co., St. Louis, Mo.	Beaver, A. F. Grim, ...	25	10.53	17.13	17.11
702	Winter. G. P. Plant Milling Co., St. Louis, Mo.	New Brighton, J. H. Hornby,	35	10.06	17.50	17.11
810	...... Richards & Evans, Cortland, O.	Sharon, J. M. Porter, ...	85	....	17.69	....
767	...... Seaboard Mills, Reading, Pa.	Reading, D. W. Dietrick,....	103	....	16.25	6.00
887	...... The Sharon Milling Co., Sharon, Pa.	West Middlesex, C. Belgie,...	119	8.38	16.69	....
789	...... D. D. Simison, Volant, Pa.	New Castle, John Allen, ...	64	....	17.75	....
912	Bixota. Simmins Milling Co., Red Wing, Minn.	Carlisle, S. B. Jackson, ...	158	7.70	18.44	17.00
878	...... Sleepy Eye Milling Co., Sleepy Eye, Minn.	York, F. Loucks & Son, ...	148	....	17.88	17.00
638	...... Benj. B. Snavely, Lexington, Pa.	Lititz, Elmer Eby, ...	22	11.96	14.25	17.00
862	...... E. O. Sprenkle, Wrightsville, Pa.	Wrightsville, Heppenstall & Bro.	132	....	15.31	....
655	...... Stanard-Tilton Milling Co., Alton, Ill.	Greensburg, W. N. Davis,....	12	8.07	16.63	15.75
993	...... Stanard-Tilton Milling Co., Alton, Ill.	Luzerne, Samuel Raub & Son,	215	9.42	17.69	15.75
660	Star. The Star & Crescent Milling Co., Chicago, Ill.	Latrobe, Frank Brinker,......	17	8.45	18.19	15.00
625	Star. The Star & Crescent Milling Co., Chicago, Ill.	Lancaster, Espenshade & Co.,	9	10.64	16.69	15.00
968	...... The Star & Crescent Milling Co., Chicago, Ill.	Mechanicsburg, A. B. Harnish.	190	6.14	17.56	15.00
839	White. The Star & Crescent Milling Co., Chicago, Ill.	Lindsey, Lindsey Milling Co.,	100	....	18.00	18.00
877	Fancy. Geo. Tileston Milling Co., St. Cloud, Minn.	York, E. E. Johnston & Co.,.	147	....	17.25	15-18

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*Statement of dealer.

FEEDING STUFFS COLLECTED IN 1907—Continued.

Crude Fat.		Crude Fiber.					
Found.	Guaranteed.	Found.	Guaranteed.	Price per ton.	Certified Composition.	Ingredients Identified by Microscopical Examination.	Chief Chemist's number.
Per ct.	Per ct.	Per ct.	Per ct.				
6.20	....	5.98	....	$33.00	....	Wheat middlings, ...	1089
4.22	4.5-5.5	4.76	....	30 00	....	Wheat middlings, ...	1096
5.32	4.50	4.51	5.75	31 00	....	Wheat middlings, ...	1063
5.24	4.50	4.21	5.75	31 00	....	Wheat middlings, ...	1059
6.39	4.75	7 38	5.75	31 00	....	Wheat middlings, ...	960
5.41	4.50	5.94	5.75	31 00	....	Wheat middlings, ...	971
6.81	....	7.12	....	30 00	....	Wheat middlings, ...	908
6.64	2.00	3.07	1.10	32 00	....	Wheat middlings, ...	1028
6.12	5.25	2.88	2.00	35 00	....	Wheat middlings, ...	991
5.80	5.25	9.96	8.30	30 00	....	Wheat middlings, ...	646
5.09	4-5	4.61	....	32 00	Pure wheat product, ...	Wheat middlings, ...	942
4.14	3-4	4.40	....	32 00	....	Wheat middlings, ...	673
5.08	....	8.93	....	....	....	Wheat middlings, ...	1054
5.60	4.5-6	9.24	....	32 00	....	Wheat middlings, ...	939
5.02	4.41	5.64	5.18	31 00	Made from pure wheat, ..	Wheat middlings, ...	692
4.98	4.41	5.39	5.18	32 00	Made from pure wheat, ..	Wheat middlings, ...	702
5.63	....	6.97	....	....	....	Wheat middlings, ...	810
4.19	2.00	3.20	....	29 00	Pure wheat middlings, ...	Wheat middlings, ...	767
4.80	....	4.91	....	....	....	Wheat middlings, ...	887
4.63	....	7.76	....	38 00	....	Wheat middlings, ...	789
6.05	4.00	8.47	3.00	32 00	....	Wheat middlings, ...	912
5.71	4.00	6.31	2.00	34.00	....	Wheat middlings, ...	878
3.09	5.00	2.56	....	30 00	Pure wheat feed, ...	Wheat middlings, ...	638
4.66	....	4.53	....	33 00	....	Wheat middlings, ...	862
5.49	4.00	5.79	....	32 00	Pure wheat middlings, ...	As certified, ...	655
5.25	4.00	5.75	....	32.00	Pure wheat middlings, ...	As certified, ...	993
6.16	4.00	6.61	7.00	29 00	....	Wheat middlings, ...	660
5.13	4.00	6.81	7.00	28 00	....	Wheat middlings, ...	625
5.86	4.00	6.33	7.00	31 00	....	Wheat middlings, ...	968
5.97	5.00	4.57	7.00	32 00	....	Wheat middlings, ...	839
5.52	3-6	5.78	....	31 00	....	Wheat middlings, ...	877

TABLE XII.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer or Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
792	No. 1 White. The Toledo Grain & Milling Co., Toledo, O.	New Castle, Fisher, Mengle & Co.	67	....	14.88	16-18
688	Standard. Washburn-Crosby Co., Minneapolis, Minn.	Ephrata, J. R. Royer, ...	48	9.96	17.00	17.00
841	Standard. Washburn-Crosby Co., Minneapolis, Minn.	Dubois, A. T. Sprankle,......	102	....	16.88	17.00
995	White. Wisconsin Milling Co., Menomonie, Wis.	Pittston, Benedict & Barber,	217	9.62	16.25	....
1129	Puritan. Unknown, ...	Mansfield, R. W. & M. F. Rose Co.	299	9.09	16.50	14-17
		Average, ...	....	....	17.17	....
		Average digestible, ...	....	....	13.22	....
	Mixed Feed: (Wheat By-Products.					
1079	Sunlight Bran and Middlings. American Cattle & Poultry Food Co., Binghamton, N. Y.	Montrose, J. C. Harrington,.	261	6.38	17.31	15-19
1086	Pure Bran and Middlings. The Allen Baker Com. Co., St. Louis, Mo.	Montrose, L. T. Harrower,..	268	7.70	16 50	14-17
889	Gem Soft Wheat Mill Run. The Allen Baker Com. Co., St. Louis, Mo.	Mercer, Mercer Milling & Lumber Co.	121	9.08	16.56	14-17
1093	......Blish Milling Co., Seymour, Ind.	Hallstead, C. L. Spencer & Son.	275	8.38	15.75	....
1088	...... Hoosier Mill Feed. Geo. T. Evans & Co., Indiapolis, Ind.	Montrose, Brown & Fassett,.	270	8.74	16.19	15-17.5
715	...... The Hicks Brown Milling Co., Mansfield, O.	Monaca, H. J. Eckert, ...	48	....	15.94	12-13
649	Sunshine Feed. The Hunter Bros. Milling Co., St. Louis, Mo.	Greensburg, Hudson & Kuhns.	6	7.53	15.39	15.00
1085	...... Geo. Q. Moon & Co., Binghamton, N. Y.	Montrose, James Cooper,.....	267	7.70	17.00	....
1107	Buckeye. The Quaker Oats Co., Chicago, Ill.	Apollo, N. H. Gosser, ...	219	6.48	16.56	13.00
802	Buckeye. The Quaker Oats Co., Chicago, Ill.	New Castle, F. W. Hutchinson & Son.	77	....	15.81	13.00
812	Buckeye. The Quaker Oats Co., Chicago, Ill.	Sharon, W. J. Kennedy,......	87	....	15.50	13.00
1109	Buckeye. The Quaker Oats Co., Chicago, Ill.	Towanda, M. J. Long, ...	279	8.32	16.13	13.00
706	Buckeye. The Quaker Oats Co., Chicago, Ill.	New Brighton, Jacob Reinehr.	39	9.23	15.81	13.00
636	Gold Mine. Sheffield-King Milling Co., Minneapolis, Minn.	Lititz, Elmer Eby, ...	20	8.74	16.44	17.00
659	Star. The Star and Crescent Milling Co., Chicago, Ill.	Latrobe, Frank Brinker, ...	16	8.01	16.00	18.00
1081	...... Waggoner Gates Milling Co., Independence, Ind	Montrose, J. C. Harrington,..	263	10.82	16.13	14-17
		Average, ...	....	....	16.19	....
		Average digestible, ...	....	....	12.47	....
	Wheat Bran.					
779	Ballard's. Ballard & Ballard Co., Louisville, Ky.	Beaver Falls, Dodds & Garrett.	54	....	14.31	16.58
913	Ballard's. Ballard & Ballard Co., Louisville, Ky.	Carlisle, S. B. Jackson, ...	159	7.81	15.06	15.25
1067	Winona. Bay State Milling Co., Winona, Minn.	Foxburg, Keystone Supply Co.	204	6.82	15.81	15.00
1094	...... Bay State Milling Co., Winona, Minn.	Hallstead, C. L. Spencer & Son.	276	6.65	16.13	15.00
1038	Badger. The Berger-Crittenden Co., Milwaukee, Wis.	Scranton, The Babcock Co.,.	241	5.76	17.31	15.00

FEEDING STUFFS COLLECTED IN 1907—Continued.

Crude Fat.		Crude Fiber.					
Found.	Guaranteed.	Found.	Guaranteed.	Price per ton.	Certified Composition.	Ingredients Identified by Microscopical Examination.	Chief Chemist's number.
Per ct.	Per ct.	Per ct.	Per ct.				
3.56	4-6	2.98	....	$34 00	....	Wheat middlings, ...	792
5.61	4.00	8.78	11.00	29 00	....	Wheat middlings, ...	688
5.19	4.00	7.31	8.00	30 00	....	Wheat middlings, ...	841
4.27	....	5.42	....	30 00	....	Wheat middlings, ...	995
5.46	3-5	9.24	....	30 00	....	Wheat middlings, ...	1129
5.24	....	5.97	....	31 14			
4.61	....	1.79					
5.66	3-5	7.84	....	30 00	Bran and middlings, ...	As certified, ...	1079
4.70	4-5	6.68	....	30 00	Pure bran and middlings,	As certified, ...	1086
4.65	4-5	6.85	....	32 00	....	Wheat bran and middlings. Some corn cockle.	889
4.96	....	7.33	....	30 00	Bran and shorts, ...	As certified, ...	1093
4.41	4-5	6.88	....	30 00	Pure wheat bran and wheat middlings.	As certified, ...	1088
3.79	4-6	7.17	....	28 00	....	Wheat bran and middlings.	715
4.80	4.00	8.69	....	27.00	Pure wheat product: Bran and middlings.	As certified, ...	649
5.47	....	7.36	....	30 00	....	Wheat bran and middlings.	1085
5.35	4.00	7.67	8.00	29 00	Wheat bran, wheat middlings and ground wheat.	As certified, ...	1107
4.67	4.00	5.97	8.00	30 00	Wheat bran, wheat middlings and ground wheat.	As certified, ...	802
5.24	4.00	7.71	8.00	28 00	Wheat bran, wheat middlings and ground wheat.	As certified, ...	812
5.56	4.00	7.57	8.00	30 00	Wheat bran, wheat middlings and ground wheat.	As certified, ...	1109
4.83	4.00	7.86	8.00	28 00	....	Wheat bran, middlings, ground wheat, oat tissues.	706
4.86	4.50	9.37	8.00	28 00	Wheat alone; pure, ...	Wheat bran and middlings.	636
4.95	4.00	8.19	7.00	27 00	....	Wheat bran and middlings.	659
4.61	4-5	6.72	....	30 00	....	Wheat bran and middlings.	1081
4.91	....	7.49	....	29 18			
3.73	....	2.62					
4.48	4.82	9.50	8.40	28 00	Warranted pure wheat bran.	As certified, ...	779
4.63	4.00	8.84	9.08	30 00	Pure wheat bran, ...	As certified, ...	913
5.84	4.75	11.20	12.00	28 50	Pure wheat bran, ...	As certified, ...	1067
6.30	4.75	10.23	12.00	29 00	....	Wheat bran, ...	1094
4.86	4.00	11.45	....	31 00	....	Wheat bran, ...	1038

TABLE XII.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer and Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
			Per ct.	Per ct.	Per ct.	Per ct.
822	Badger. The Berger Crittenden Co., Milwaukee, Wis.	Reading, G. M. Krick, ...	112	....	15.31	15.00
817	Badger. The Berger Crittenden Co., Milwaukee, Wis.	So. Sharon, J. B. Roux, ...	92	....	15.06	15.00
738	...... Brandt & Stehman, Mt. Joy, Pa.	Marietta, J. F. O'Brien, ...	74	....	14.25	....
1118	...... Geo. E. & F. A. Brooks, Wellsboro, Pa.	Wellsboro, G. E. & F. A. Brooks.	288	4.75	16.56	....
777	Clover Leaf. Seymour Carter, Hastings, Minn.	Beaver Falls, J. G. Allen, ...	52	....	15.06	14.30
757	Nodak. Chaffee-Miller Milling Co., Carrolton, N. Dak.	Reading, A. C. Wertz & Bro.,	93	....	15.81	13.43
856	...... Chapin & Co., Buffalo, N. Y.	Emigsville, Brillinger & Swartz.	126	....	15.75	14-18
919	Columbia. Chapin & Co., Buffalo, N. Y.	Chambersburg, D. W. Faust & Sons.	165	7.04	15.56	....
740	Columbia. Chapin & Co., Buffalo, N. Y.	Modena, W. W. Meredith, ...	76	....	15.69	....
671	Coarse. C. S. Christensen Co., Madelia, Minn.	Manheim, B. R. Hollinger, ..	31	10.05	16.13	15.25
1020	...... L. Christian, Minneapolis, Minn.	Mars, W. J. Kennedy Hardware Co.	180	9.10	15.13	16.00
748	Columbia Milling Co., Columbia, Pa.	Columbia, Columbia Milling Co.	84	....	15.50	10.00
996	Commander. Commander Mill Co., Minneapolis, Minn.	Wilkes-Barre, Robbins Milling Co.	219	8.27	14.50	14.50
680	...... The Consolidated Milling Co., Minneapolis, Minn	Paradise, Samuel Eby & Son,	40	9.87	14.94	14.25
1072	...... Coppes, Zook, Mutschler Co., Nappanee, Ind.	Gettysburg, J. G. Wolf Sons, .	252	7.20	15.69	15.68
1032	Duluth Imperial. The Duluth Superior Mill Co., Duluth, Minn.	Dunmore, P. D. Manley & Son.	235	6.71	16.56	14.50
943	...... Dwight Flour Mills, Minneapolis, Minn.	Conemaugh, F. B. Custer & Bros.	151	7.38	14.94	12-15
677	...... Dwight Flour Mills, Minneapolis, Minn.	Gap, J. C. Walker & Sons Co.	37	8.89	14.63	12-15
920	No. 1 Choice, Coarse. Eagle Roller Mill Co., New Ulm, Minn.	Chambersburg, Coyle & Diehl.	166	6.98	16.63	15.90
871	...... East Berlin Milling Co., East Berlin, Pa.	Dover, S. H. Myers, ...	141	....	14.69	14.00
691	Fine. Jonas F. Eby & Son, Lancaster, Pa.	Ephrata, Reuben Fahnestock.	51	9.99	17.50	....
787	...... Eckhart & Swan Milling Co., Chicago, Ill.	New Castle, P. Wagner & Son.	62	....	16.19	14-17
1110	Eclipse. Elysian Milling Co., Elysian, Minn.	Towanda, F. H. Hagerman,	280	6.22	17.00	15.20
1123	...... Gamble, Gheen & Co., Bellefonte, Pa.	Knoxville, Knoxville Tobacco Co.	293	10.63	17.25	11-14
714	Winter. The Goshen Milling Co., Goshen, Ind.	Monaca, Allen Davidson, ...	47	10.07	14.38	15.40
953	...... The Isaac Harter Milling Co., Toledo, O.	Johnstown, Penn Traffic Co.	161	8.06	15.81	14-15
994	...... The Isaac Harter Milling Co., Toledo, O.	Luzerne, H. N. Schooley & Son.	216	8.20	14.56	14-15
1076	...... The Isaac Harter Milling Co., Toledo, O.	Gettysburg, Col. E. Spangler.	256	6.36	15.75	14-15
1046	Ben Hur. Hennepin Mill Co., Minneapolis, Minn.	Scranton, Kizer Mill and Elev. Co.	249	8.17	14.63	15.00
782	...... Hicks Brown Milling Co., Mansfield, O.	Baden, N. Martin, ...	57	....	15.75	12-15
*576	...... John Hoffer Flouring Mill Co., Steelton, Pa.	Harrisburg, C. F. Gohl. ..	1	10.20	15.25	13.00
959	Hubbard's Flaky Bran. Hubbard Milling Co., Mankato, Minn.	Carlisle, Hoffman Bros., ...	181	7.44	15.25	14.00
1095	...... Hunter Bros. Milling Co., St. Louis, Mo.	Hallstead, C. L. Spencer & Son.	277	9.56	16.06	....

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*Sampled before August 1, 1907.

FEEDING STUFFS COLLECTED IN 1907—Continued.

Crude Fat.		Crude Fiber.					
Found.	Guaranteed.	Found.	Guaranteed.	Price per ton.	Certified Composition.	Ingredients Identified by Microscopical Examination.	Chief Chemist's number.
Per ct.	Per ct.	Per ct.	Per ct.				
4.97	4.00	9.69	....	$28 00		Wheat bran,	822
4.39	4.00	10.64	....	28 00		Wheat bran,	817
4.46	....	8.94	....	30 00		Wheat bran,	738
4.75	....	7.51	....	30 00	Pure wheat bran,	As certified,	1118
5.39	5.20	9.92	....	25 00		Wheat bran,	777
4.65	4.88	10.56	9.83	28 00		Wheat bran,	757
4.81	3-5	9.08	....	30 00	Pure wheat bran,	As certified,	856
5.08	....	10.09	....	27 00		Wheat bran,	819
5.18	....	10.45	....	28 00		Wheat bran,	740
5.26	5.20	9.89	10.80	26 00		Wheat bran,	671
4.89	4.00	10.77	9.50	28 00		Wheat bran,	1020
4.18	4.00	8.10	90.00	27 00		Wheat bran,	748
5.33	4 .00	11.37	10.50	31 00		Wheat bran,	996
5.15	4.00	11.78	10.25	26 00		Wheat bran,	680
4.53	3.24	8.36	....	28 00	Pure bran,	Wheat bran,	1072
5.58	4.00	9.99	10.00	31 00		Wheat bran,	1022
5.48	3-5	11.72	8.00	30 00		Wheat bran,	943
5.10	3-5	11.89	8.00	27 00		Wheat bran,	677
5.45	3.85	9.50	....	27 00		Wheat bran,	920
4 58	4.00	8.19	8.00	31 00		Wheat bran,	871
4.90	....	8.48	....	28 00		Wheat bran,	691
4.10	3-5	10.32	....	28 00		Wheat bran,	787
5.36	4.70	11.26	....	28 00		Wheat bran,	1110
4.71	3-5	7.23	....	32 00		Wheat bran,	1123
3.87	3.70	10.13	....	28 00		Wheat bran,	714
4.73	3-4	8.74	....	30 00		Wheat bran,	953
4.75	3-4	9.37	....	32 00		Wheat bran,	994
5.03	3-4	9.53	....	29 00		Wheat bran,	1076
5.10	4.00	10.91	10.00	31 00		Wheat bran,	1046
4.43	4-6	9.10	....	28 00		Wheat bran,	782
4.64	3.50	9.17	....	26 00		Wheat bran,	576
5.62	4.00	11.14	....	30 00		Wheat bran,	959
5.11	....	7.13	....	29 00		Wheat bran,	1095

TABLE XII.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer and Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
1127	...... Husted Milling & Elev. Co., Buffalo, N. Y.	Knoxville, F. J. Sherer, ...	297	7.50	15.88	....
707	Karcher Bros., Rochester, Pa.	New Brighton, Guy Bros.,	40	10.34	15.75	14-17
725	Spring. James L. King, West Chester, Pa.	Parkesburg, Brinton Walter,	61	10.29	17.00	12-16
916	...... W. B. Lehman, Reid, Md.	Greencastle, J. R. Davison,	162	8.28	16.63	....
621	...... Levan & Sons, Lancaster, Pa.	Lancaster, Nein & Fisher,	5	10.25	13.94	13.00
1075	...... Linn & Briggs, Orrtanna, Pa.	Gettysburg, W. Oyler & Bro.	255	7.64	16.31	....
686	Elmco. Listman Mill Co., La Crosse, Wis.	Ephrata, Ephrata Coal & Lumber Co.	46	9.78	15.31	15.75
626	Elmco. Listman Mill Co., La Crosse, Wis.	Lancaster, Espenshade & Co.	10	11.50	15.94	15.75
836	Elmco. Listman Mill Co., La Crosse, Wis.	Punxsutawney, G. A. Weiss & Bro.	97	....	15.31	15.75
808	...... The Marquette Roller Mill Co., Marquette, Kan.†	Ellwood City, W. W. Davidson.	83	....	17.75	....
892	...... Mather's Bros., Greenville, Pa.	Greenville, C. Cole, ...	124	8.21	15.38	....
1024	...... Mauser Mill Co., Laurys, Pa.	Hazleton, J. & C. J. Kirchner.	227	8.05	16.06	12-16
798	...... Merrill & Lyon, Chicago, Ill.	New Castle, City Roller Mills.	73	....	16.00	....
‡579	...... Millbourne Mills Co., Philadelphia, Pa.	Harrisburg, Paxton Flour and Feed Co.	4	9.87	15.94	12-17
1097	Hardenberg's Extra Coarse. National Milling Co., Minneapolis, Minn.	Leechburg, Leechburg Milling Co.	209	7.13	16.81	15-17
676	Hardenberg's Extra Coarse. National Milling Co., Minneapolis, Minn.	Gap, J. C. Walker & Sons Co.	36	9.68	16.13	16-17
1064	Go-Far. New Prague Flouring Mill Co., New Prague, Minn.	Parkers Landing, A. Affolter.	201	9.32	14.81	14.00
1078	Winter. G. A. Plant Milling Co., St. Louis, Mo.	Montrose, J. C. Harrington,	260	5.75	16.06	15.43
800	...... James Quirk, Montgomery, Minn.	New Castle, J. S. Brown's Son.	75	....	15.13	16 60
1131	...... James Quirk, Montgomery, Minn.	Mansfield, C. S. Kingsley & Co.	301	8.05	15.44	14.50
1125	...... M. G. Rankin, Milwaukee, Wis.	Knoxville, Knoxville Tobacco Co.	295	7.47	16.94	14.00
992	...... Red Lake Falls Milling Co., Red Lake Falls, Minn.	Plymouth, Miner-Hillard Milling Co.	214	7.81	14.69	....
1116	Fancy Broad Flake. Sheffield-King Milling Co., Minneapolis, Minn.	Wellsboro, G. C. & F. A. Brooks.	286	3.30	16.44	15.60
1034	Fancy Broad Flake. Sheffield-King Milling Co., Minneapolis, Minn.	Carbondale, Carbondale Milling Co.	237	6.69	16.75	15.60
879	...... Sleepy Eye Milling Co., Sleepy Eye, Minn.	Wellsboro, G. C. & F. A.	285	4.80	15.75	15.00
809	...... Sleepy Eye Milling Co., Sleepy Eye, Minn.	Sharon, J. M. Porter, ...	84	....	15.94	15.00
1115	...... Southwestern Milling Co., Kansas City, Mo.	Wellsboro, G. C. & F. A. Brooks.	285	4.80	16.50	15.00
1036	K. C. K. Southwestern Milling Co., Kansas City, Mo.	Carbondale, C. Ditchburn's Sons.	239	8.80	15.38	15.00
654	...... Stanard-Tilton Milling Co., Alton, Ill.	Greensburg, W. N. Davis, ..	11	8.70	15.81	13.00
1114	...... Standard Milling Co., Buffalo, N. Y.	Athens, E. B. Gavett, ...	284	4.85	18.19	14.25

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*Per 47 pounds.
†Statement of dealer.
‡Sampled before August 1, 1907.

FEEDING STUFFS COLLECTED IN 1907—Continued.

Crude Fat.		Crude Fiber.					
Found.	Guaranteed.	Found.	Guaranteed.	Price per ton.	Certified Composition.	Ingredients Identified by Microscopical Examination.	Chief Chemist's number.
Per ct.	Per ct.	Per ct	Per ct.				
5.31	....	10.17	....	$30 00	....	Wheat bran,	1127
5.15	3-6	9.19	....	*0 80	....	Wheat bran,	707
4.37	2-5	9.93	....	28 00	....	Wheat bran.	725
4.43	....	7.90	....	30 00	....	Wheat bran,	916
4.45	3.00	8.92	....	27 50	....	Wheat bran.	621
5.30	....	7.47	....	28 00	....	Wheat bran.	1075
4.83	4.73	10.00	....	29 00	Pure Elmco bran,	Wheat bran.	686
4.73	4.73	9.88	....	27 00	Pure Elmco bran,	Wheat bran,	626
4.87	4.73	8.57	....	31 00	....	Wheat bran.	836
4.35	....	7.52	....	28 00	....	Wheat bran.	808
5.64	....	7.86	....	....	....	Wheat bran,	892
4.99	3-4	9.50	6-10	28 00	....	Wheat bran.	1024
5.33	....	10.08	....	30 00	....	Wheat bran.	798
5.70	3-6	9.72	....	25 00	....	Wheat bran,	1097
5.45	4-5	8.87	....	30 00	....	Wheat bran.	579
5.38	4-5	10.14	....	28 00	....	Wheat bran. Oat tissues,	676
5.17	4.75	10.69	10.50	29.00	Pure and unadulterated wheat bran.	As certified.	1064
4.95	3.27	8.71	9.72	29 00	Made from pure wheat...	Wheat bran.	1078
5.07	4.40	10.67	....	28 00	....	Wheat bran,	800
5.10	4.40	11.87	....	28 00	Pure wheat bran.	As certified,	1131
4.82	4.00	10.24	....	30 00	Pure wheat bran.	As certified.	1125
5.68	....	11.16	....	31 00	....	Wheat bran.	992
5.66	3.11	11.20	....	28 00	....	Wheat bran.	1116
5.54	3.11	10.42	....	28 00	....	Wheat bran.	1034
5.24	4.00	9.71	9.50	31.00	....	Wheat bran.	879
5.61	4.00	9.99	9.50	30 00	....	Wheat bran.	809
4.59	5.25	9.90	10.00	28 00	Pure bran from wheat,..	As certified.	1115
4.35	5.25	9.54	10.00	28 00	....	Wheat bran.	1036
5.09	3.50	9.85	....	28 00	Pure wheat product.	Wheat bran,	654
5.84	3.25	9.67	11.50	28 00	....	Wheat bran.	1114

TABLE XII.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer and Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
661	Star. The Star & Crescent Milling Co., Chicago, Ill.	Latrobe, Frank Brinker, ...	18	8.50	16.25	14.00
838	Star. The Star & Crescent Milling Co., Chicago, Ill.	Lindsey, Lindsey Milling Co.	99	....	15.31	14.00
875	Fancy. George Tileston Milling Co., St. Cloud, Minn.	York, E. E. Johnston & Co.,	145	....	14.44	14-17
701	...... Toledo Grain & Milling Co., Toledo, O.	Rochester, Rochester Seed & Supply Co.	34	10.26	15.69	13-15
978	...... C. W. Wagar & Co., Philadelphia, Pa.	Mechanicsburg, J. H. Kohler.	200	5.43	16.38	13.00
*578	Coarse. Washburn-Crosby Co., Minneapolis, Minn.	Harrisburg, C. Etter & Sons,	3	11.30	14.94	15.00
717	Unknown, ...	Ephrata, W. B. Funkhauser.	53	9.31	15.31	13-17
		Average, ...	......	....	15.74	....
		Average digestible, ...	......	....	12.12	....
	OAT BY-PRODUCTS.					
1045	Friends' Oat Feed. The Great Western Cereal Co., Chicago, Ill.	Scranton, Dickson Mill and Grain Co.†	248	4.46	5.19	7.00
961	Royal Oat Feed. The Great Western Cereal Co., Chicago, Ill.	Mechanicsburg, A. B. Harnish.	183	5.76	6.81	7.53
997	Royal Oat Feed. The Great Western Cereal Co., Chicago, Ill.	Wilkes-Barre, Robbins Mil- Co.	220	6.11	6.44	7.60
		Average, ...	....	....	6.15	....
	MIXED FEEDS. *Proprietary Dairy and Stock Feeds.*					
*601	Quaker Dairy Feed. The American Cereal Co., Chicago, Ill.	Washington, G. W. McBrier.	22	7.17	12.00	12-14
1128	Sucrene Dairy Feed. The American Milling Co., Philadelphia, Pa.	Wellsboro, G. C. & F. A. Brooks.	298	11.25	16.81	16.50
619	Sucrene Dairy Feed. The American Milling Co., Philadelphia, Pa.	Lancaster, J. W. Eshelman,	3	13.71	16.59	16.50
*605	Sucrene Dairy Feed. The American Milling Co., Philadelphia, Pa.	Washington, Brit Hart, ...	26	12.57	17.57	16.50
683	Sucrene Dairy Feed. The American Milling Co., Philadelphia, Pa.	Leaman Place, H. K. Hershey.	43	12.74	18.21	16.50
1004	Sucrene Dairy Feed. The American Milling Co., Philadelphia, Pa.	Butler, H. J. Klingler & Co.	163	8.71	17.45	16.50
651	Sucrene Dairy Feed. The American Milling Co., Philadelphia, Pa.	Greensburg, McFarland Supply Co.	8	11.81	16.27	16.50
1133	Sucrene Dairy Feed. The American Milling Co., Philadelphia, Pa.	Mansfield, R. W. & M. F. Rose Co.	303	11.19	17.35	16.50
907	Sucrene Dairy Feed. The American Milling Co., Philadelphia, Pa.	Mount Joy, Amos Wolgemuth.	153	12.64	18.65	16.50
		Average, ...	....	....	17.36	....

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*Sampled before August 1, 1907.
†Not sold by dealer.

FEEDING STUFFS COLLECTED IN 1907—Continued.

Crude Fat.		Crude Fiber.		Price per ton.	Certified Composition.	Ingredients Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
5.35	4.00	10.35	5.00	......	....	Wheat bran, ...	661
5.02	4.00	10.74	6.00	$30 00	....	Wheat bran, ...	838
4.88	3-6	5.57	....	29 00	....	Wheat bran, ...	875
4.79	4-6	9.26	....	28 00	....	Wheat bran, ...	761
5.61	5.00	10.05	....	30 00	Pure wheat bran, ...	As certified, ...	978
5 03	4.00	10.54	9.50	24 00	....	Wheat bran, ...	578
4.83	4-6	11.21	....	28 00	....	Wheat bran, ...	717
5.02 3.16	....	9.72 3.79	....	28 66			
2.02	2.75	19.12	......	......	....	Oat shorts, oat middlings and oat hulls.	1045
2.04	2.65	24.75	....	15 00	....	Oat shorts, oat middlings and oat hulls.	961
2.02	2.80	22.34	....	29.00	....	Oat shorts, oat middlings and oat hulls.	997
2.03	....	22.07	....	22 00			
3.70	3-3.5	17.54	....	26.00	....	....	601
5.03	3.50	9.65	12.00	28 00	Cottonseed meal, brewers' grains, wheat feed, corn, oats and molasses.	Cottonseed meal, brewers' grains, corn, oats, molasses and weed seeds.	1128
4.99	3.50	11.95	12.00	26.00	Cottonseed meal, brewers' grains, wheat feed, corn, oats and molasses.	Cottonseed meal, brewers' grains, corn, oats, molasses and weed seeds.	619
5.24	3.50	12.59	....	24.00	....	....	605
4.56	3.50	10.97	12.00	25 00	....	Cottonseed meal, brewers' grains, corn, oats, molasses and grain screenings.	683
5.31	3.50	12.13	....	28 00	....	Cottonseed meal, brewers' grains, corn, oats, molasses and grain screenings.	1004
4.90	3.50	9.93	12.00	26.50	Cottonseed meal, brewers' grains, wheat feed, corn, oats and molasses.	Cottonseed meal, brewers' grains, oats, molasses and weed seeds.	651
5.87	3.50	11.19	....	28 00	Cottonseed meal, brewers' grains, wheat feed, corn, oats and molasses.	Cottonseed meal, brewers' grains, oats, corn, molasses and weed seeds.	1133
5.12	3.50	11.94	12.00	25 50	Cottonseed meal, brewers' grains, wheat feed, corn, oats and molasses.	Cottonseed meal, brewers' grains, oats, corn, molasses and weed seeds.	907
5.13	....	11.29	....	26 37			

TABLE XII.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer and Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein. Found.	Crude Protein. Guaranteed.
				Per ct.	Per ct.	Per ct.
669	Three Star Molasses Grains. M. F. Baringer, Phila., Pa.	Manheim, B. R. Hollinger,	29	11.10	15.73	15.00
882	Creamo Dairy Feed. The Corno Mills Co., St. Louis, Mo.	York, John Keasey & Sons,	152	8.79	13.00	15.50
791	Holstein Sugar Feed. F. W. Goeke & Co., St. Louis, Mo.	New Castle, Fisher, Mengle & Co.	66	6.42	12.93	15.00
652	Holstein Sugar Feed. F. W. Goeke & Co., St. Louis, Mo.	Greensburg, McFarland Supply Co.	9	6.59	15.75	15.00
888	Holstein Sugar Feed. F. W. Goeke & Co., St. Louis. Mo.	Mercer. Mercer Milling and Lumber Co.	120	6.61	12.38	15.00
*604	Holstein Sugar Feed. F. W. Goeke & Co., St. Louis, Mo.	Washington, J. W. Pinar, ..	25	8.74	13.45	15.00
667	Holstein Sugar Feed. F. W. Goeke & Co., St. Louis, Mo.	Mt. Pleasant. O. P. Shupe,	24	7.78	15.31	15.00
		Average, ...	....	....	13.96	....
1051	Sterling Stock Feed. The Great Western Cereal Co., Chicago, Ill.	Kittanning, Wm. Gates, ..	188	6.87	10.44	11-13
1012	Regal Stock Feed. The Imperial Grain & Milling Co., Toledo, O.	Butler, Leedom, Worrall & Co.	171	6.29	7.25	8.10
940	Regal Stock Feed. The Imperial Grain & Milling Co., Toledo, O.	Johnstown, John Widman,..	148	5.06	7.50	8.10
		Average, ...	....	....	7.38	....
744	Mueller's Molasses Grains. E. P. Mueller, Milwaukee, Wis.	Timicula, David Brinton, ..	80	15.40	18.07	17.50
795	Mueller's Molasses Grains. E. P. Mueller, Milwaukee. Wis.	New Castle, City Roller Mills.	70	14.94	19.10	17.00
653	Mueller's Molasses Grains. E. P. Mueller, Milwaukee. Wis.	Greensburg, W. N. Davis, ..	10	18.37	16.54	19.81
1030	Mueller's Molasses Grains, E. P. Mueller, Milwaukee. Wis.	Hazleton, Geo. W. Engle,†..	233	5.61	15.00	19.81
728	Mueller's Molasses Grains. E. P. Mueller, Milwaukee. Wis.	Pomeroy, M. T. Phillips, ..	64	17.42	14.46	....
903	‡Mueller's Molasses Grains. E. P. Mueller, Milwaukee. Wis.	Grove City, Pizor Bros., ...	135	27.21	17.82	....
*607	‡Mueller's Molasses Grains. E. P. Mueller, Milwaukee. Wis.	Washington, C. B. Ruch, ..	28	18.09	10.21	....
933	Mueller's Molasses Grains. E. P. Mueller. Milwaukee. Wis.	Johnstown. Swope Bros.. ...	141	16.86	14.64	17.50

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*Sampled before August 1, 1907.
†Not sold by dealer.
‡Improperly guaranteed: Protein and fat, 22.54 per cent.

FEEDING STUFFS COLLECTED IN 1907—Continued.

Crude Fat.		Crude Fiber.					
Found.	Guaranteed.	Found.	Guaranteed.	Price per ton.	Certified Composition.	Ingredients Identified by Microscopical Examination.	Chief Chemist's number.
Per ct.	Per ct.	Per ct.	Per ct.				
2.19	3.00	13.36	....	$21 00	....	Cottonseed meal, barley hulls, malt sprouts, corn, molasses, rice hulls and weed seeds.	669
3.46	5.10	15.34	17.50	26.00	Ground alfalfa, gluten meal, corn and oats.	As certified, ...	882
2.24	3.00	15.95	....	25 00	Molasses, wheat, corn, oats, barley, cottonseed meal, mill feed and their by-products.	Malt sprouts and rice hulls.	791
4.53	3.00	13.59	....	26.50	....	Cottonseed meal, malt sprouts, corn, barley hulls, screenings and molasses.	652
2.57	3.00	17.51	....	27 00	Molasses, wheat, corn, oats, barley, cottonseed meal, mill feed and their by-products.	Molasses, wheat, corn, oats, barley, cottonseed meal, rice hulls, Kaffir corn and screenings.	888
4.01	3.00	12.14	....	26 00	....	....	604
4.79	3.00	14.26	....	25 00	....	Cottonseed meal, malt sprouts, corn, barley hulls, oat hulls, rice hulls, screenings and molasses.	667
3.63	....	14.69	....	25 90			
3.70	4-5	10.39	9.00	32 00	Corn, oats, barley, Red Dog flour, oat shorts and oat hulls.	As certified.	1051
3.20	3.70	13.15	12.75	29 50	Shelled and ear corn, oat bran, oat hulls, oat middlings, white hominy meal.	As certified.	1012
2.82	3.70	12.38	....	32 00	....	Shelled and ear corn, oat bran, oat hulls, oat middlings and hominy feed.	940
3.01	....	12.77	....	30 75			
3.28	2.50	10.74	15-20	24 00	Molasses, malt sprouts, dried grains and products of grain.	Molasses, malt sprouts, brewers' grains, rice hulls and oat hulls.	744
6.29	2.50	10.98	10.00	26 00	Molasses, dried grains, malt sprouts, grain and products of grain.	Molasses, malt sprouts, oat hulls, oats, brewers' grains and screenings.	795
3.39	2.73	9.67	....	24 00	....	Molasses, malt sprouts, oat hulls, oats, rice hulls and screenings.	653
3.14	2.23	20.98	....	....	....	Molasses, brewers' grains and rice hulls.	1030
2.45	....	11.26	....	21 00	....	Molasses, barley hulls, malt sprouts, oats, oat hulls and rice hulls.	728
4.91	....	9.34	....	26 00	....	Molasses, brewers' grains, oats and screenings.	903
2.50	....	10.10	....	24 00	....	....	607
5.81	2.50	9.56	10.00	26 00	Molasses, dried grains, malt sprouts, grain and products of grain.	Molasses, malt sprouts, barley, oats, oat hulls and screenings.	933

TABLE XII.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer and Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
724	Muellers' Molasses Grains. E. P. Mueller, Milwaukee, Wis.	Parkesburg, Brinton Walter,	60	13.64	13.05	17.50
834	Mueller's Molasses Grains. E. P. Mueller, Milwaukee, Wis.	Punxsutawney, T. C. Zeitler,	95	20.33	16.75	19.81
		Average, ...	....	....	15.56	....
956	Primo Golden Dairy Feed. Penna. Primo Feed Co., Harrisburg, Pa.	Carlisle, Hoffman Bros., ...	178	6.88	25.56	25.00
958	Primo Peerless Hog Feed. Penna. Primo Feed Co., Harrisburg, Pa.	Carlisle, Hoffman Bros., ...	180	9.95	15.38	15.00
962	Protena Dairy Feed. Purina Mills, St. Louis, Mo.	Mechanicsburg, A. B. Harnish.	184	5.41	19.75	20.00
857	Schumacher's Stock Feed. The American Cereal Co., Chicago, Ill.	Emigsville, Brillinger & Swartz.	127	....	10.88	11.00
*600	Schumacher's Stock Feed. The American Cereal Co., Chicago, Ill.	Washington, G. W. McBrier.	21	8.45	10.44	11-13
*582	Schumacher's Stock Feed. The American Cereal Co., Chicago, Ill.	Harrisburg, I. L. Nailor, ...	7	9.62	10.06	11-13
693	Schumacher's Stock Feed. The Quaker Oats Co., Chicago, Ill.	Beaver, A. F. Grime, ...	26	7.88	10.25	10.00
967	Schumacher's Stock Feed. The Quaker Oats Co., Chicago, Ill.	Mechanicsburg, A. B. Harnish.	189	7.13	10.56	10.00
911	Schumacher's Stock Feed. The Quaker Oats Co., Chicago, Ill.	Carlisle, S. B. Jackson, ...	157	7.53	11.19	10.00
711	Schumacher's Stock Feed. The Quaker Oats Co., Chicago, Ill.	Freedom, Linnenbrink & Mengel.	44	8.12	11.75	10.00
1113	Schumacher's Stock Feed. The Quaker Oats Co., Chicago, Ill.	Towanda, M. J. Long, ...	283	7.55	11.38	10.00
622	Schumacher's Stock Feed. The Quaker Oats Co., Chicago, Ill.	Lancaster, Fred. Pontz, ...	6	7.45	10.06	11.00
816	Schumacher's Stock Feed. The Quaker Oats Co., Chicago, Ill.	So. Sharon, J. B. Roux, ...	91	....	10.75	10.00
1021	Schumacher's Stock Feed. The Quaker Oats Co., Chicago, Ill.	Valencia, S. E. Walters, ...	181	8.12	11.69	10.00
		Average, ...	....	....	10.82	....
918	Schumacher's Calf Meal. The Quaker Oats Co., Chicago. Ill.	Chambersburg, D. W. Faust & Sons.	164	7.51	20.75	19-21

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*Sampled before August 1, 1907.

FEEDING STUFFS COLLECTED IN 1907—Continued.

Crude Fat.		Crude Fiber.					
Found.	Guaranteed.	Found.	Guaranteed.	Price per ton.	Certified Composition.	Ingredients Identified by Microscopical Examination.	Chief Chemist's number.
Per ct. 2.47	Per ct. 2.50	Per ct. 17.07	Per ct. 10.00	$23 00	....	Molasses, brewers' grains, oats and rice hulls.	724
2.86	2.73	7.80	.. ..	28 00	....	Molasses, malt sprouts, brewers' grains, distillers' grains and oat hulls.	834
3.71	....	11.75	....	24.67			
7.86	6.00	10.34	8.00	38 00	Distillers' grains, malt sprouts, brewers' grains, wheat middlings, cottonseed meal and Oleum Patre preparation. Degerminated.	As certified, ...	956
5.40	6.00	4.31	6.00	42 00	Wheat middlings, cracked corn, cottonseed meal, wheat bran, distillers' grains and Oleum Patre preparation. Degerminated.	As certified, ...	958
4.02	3.50	15.76	....	25 00	....	Alfalfa, corn, cottonseed meal and rice hulls.	962
3.39	4.00	9.02	10.00	35 00	....	Corn, oats, oat hulls and barley.	857
4.55	4-5	11.92	....	27 00	....	....	600
4.43	4-5	11.37	....	25 00	....	....	582
4.23	4.00	11.82	10.00	32 00	Corn, barley, wheat flour and oat feed.	As certified, ...	693
4.05	4.00	10.16	10.00	33 00	Corn, barley, wheat flour, oat shorts, oat middlings and oat hulls.	As certified, ...	967
4.47	4.00	11.59	10.00	33 00	Corn, barley, wheat flour, oat shorts, oat middlings and oat hulls.	As certified, ...	911
4.60	4.00	11.12	10.00	33 00	....	Corn, barley, wheat flour, oat shorts, oat middlings and oat hulls.	711
4.17	4.00	11.17	10.00	31 00	Corn, barley, wheat flour, oat shorts, oat middlings, oat hulls and cottonseed meal.	As certified, ...	1113
4.33	4.00	13.34	10.00	31 00	Corn, barley, wheat flour, oat shorts, oat middlings and oat hulls.	As certified, ...	622
4.33	4.00	11.24	10.00	23 00	Corn, barley, wheat flour, oat shorts, oat middlings and oat hulls.	As certified, ...	816
4.54	4.00	10.89	10.00	32 00	Corn, barley, wheat flour, oat shorts, oat middlings and oat hulls.	As certified, ...	1021
4.28	....	11.24	....	30 45			
8.92	8-9.5	2.61	3.00	60 00	Oat meal, wheat meal, flaxseed and casein.	As certified, ...	918

TABLE XII.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer and Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
				Per ct.	Per ct.	Per ct.
949	Schumacher's Calf Meal. The Quaker Oats Co., Chicago, Ill.	Johnstown, A. F. Stutzman,	157	6.55	21.88	19-21
1074	Schumacher's Calf Meal. The Quaker Oats Co., Chicago, Ill.	Gettysburg, J. G. Wolf's Sons.	254	7.79	21.94	19-21
		Average,	....	....	21.52	....
*613	Red Cow Dairy Feed. Western Dairy Feed Co., Milwaukee, Wis.	Columbia, P. G. Brenneman,	34	10.22	13.91	17.50
752	Red Cow Dairy Feed. Western Dairy Feed Co., Milwaukee, Wis.	Columbia, P. G. Brenneman,	88	8.36	16.25	....
685	Red Cow Dairy Feed. Western Dairy Feed Co., Milwaukee, Wis.	Ephrata, Ephrata Coal & Lumber Co.	45	11.86	11.53	....
964	Red Cow Dairy Feed. Western Dairy Feed Co., Milwaukee, Wis.	Mechanicsburg, A. B. Harnish.	186	4.86	15.38	16-17.5
639	Red Cow Dairy Feed. Western Dairy Feed Co., Milwaukee, Wis.	Lititz, A. G. Hershey, ...	23	9.29	13.35	17.50
641	Red Cow Dairy Feed. Western Dairy Feed Co., Milwaukee, Wis.	Lititz, A. G. Hershey, ...	25	6.08	23.63	17.50
623	Red Cow Dairy Feed. Western Dairy Feed Co., Milwaukee, Wis.	Lancaster, Fred. Pontz, ...	7	9.68	13.20	16-17
1091	Red Cow Dairy Feed. Western Dairy Feed Co., Milwaukee, Wis.	New Milford, Shay Bros., ..	273	8.78	12.86	15.00
		Average,	....	....	15.02	....
966	Hammond Dairy Feed. Western Grain Products Co., Milwaukee, Wis.	Mechanicsburg, A. B. Harnish.	188	14.12	13.81	17.00
869	Hammond Dairy Feed. Western Grain Products Co., Milwaukee, Wis.	Dover, W. S. Eppley, ...	139	14.28	16.12	17.00
624	Hammond Dairy Feed. Western Grain Products Co., Milwaukee, Wis.	Lancaster, Espenshade & Co.	8	17.36	15.83	17.00
741	Hammond Dairy Feed. Western Grain Products Co., Milwaukee, Wis.	Modena, W. W. Meredith,..	77	12.98	15.52	17.00
		Average,	....	....	15.32	....
614	Molasses Grains.‡ Unknown,	Gap, A. J. Marron, ...	36	22.75	9.89	....

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*Sampled before August 1, 1907.
†Per 50 pounds.
‡Improperly guaranteed: Protein and fat, 24.54 per cent.

FEEDING STUFFS COLLECTED IN 1907—Continued.

Crude Fat.		Crude Fiber.		Price per ton.	Certified Composition.	Ingredients Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
8.45	8-9.5	3.33	3.00	†1 75	Oat meal, wheat meal, flaxseed and casein.	As certified, ...	949
8.19	8-9.5	3.30	3.00	$100 00	Oat meal, wheat meal, flaxseed and casein.	As certified, ...	1074
8.52	....	3.08	....	80 00			
3.50	3.50	11.70	....	....	....	Malt sprouts, barley, corn, cottonseed meal, molasses, rice hulls and screenings.	613
3.72	....	12.26	12.50	24 00	Cottonseed meal, malt sprouts, corn, barley, cane molasses, etc.	Cottonseed meal, malt sprouts, corn, barley, molasses, rice hulls and oat hulls.	752
2.49	....	7.96	12.50	24 00	Cottonseed meal, malt sprouts, corn, barley, cane molasses. etc.	Cottonseed meal, malt sprouts, corn, barley hulls, molasses, rice hulls and screenings.	685
5.51	3.50	11.98	....	26 00	....	Cottonseed meal, malt sprouts, corn, oats, barley, molasses and rice hulls.	964
2.99	3.50	12.74	....	23 00	Corn, oats, malt sprouts, cottonseed meal and barley.	Cottonseed meal, malt sprouts, corn, oats, barley, molasses and rice hulls.	639
5.12	3.50	13.65	....	19 00	Corn, oats, malt sprouts and barley.	Oats, malt sprouts, barley, brewers' grains, corn bran, rice hulls and screenings.	641
2.61	3.00	15.12	12.50	21 50	Cottonseed meal, malt sprouts, corn, barley, cane molasses, etc.	Cottonseed meal, malt sprouts, corn, barley, molasses and rice hulls.	623
2.73	3.00	15.92	15.00	28 00	....	Cottonseed meal, malt sprouts, corn, brewers' grains, rice hulls, molasses and screenings.	1091
3.58	....	12.67	....	23 64			
3.39	3.00	10.15	....	24 00	....	Cottonseed meal, corn, malt sprouts, barley, distillers' grains, molasses and screenings.	966
4.53	3.00	8.76	9.00	29 00	Corn, oats, barley, distillers' grains, cottonseed meal, grain screenings, malt sprouts and pure cane molasses.	As certified, ...	869
4.09	3.00	9.66	9.00	26 00	Corn, oats, barley, distillers' grains, cottonseed meal, grain screenings, malt sprouts and pure cane molasses.	As certified, ...	624
5.03	3.00	9 77	9.00	25 00	Corn, oats, barley, distillers' grains, cottonseed meal, grain screenings, malt sprouts and pure cane molasses.	Cottonseed meal, malt sprouts, barley, distillers' grains, molasses, oats and screenings.	741
4.26	....	9.59	....	26 00			
1.80	....	13.57	....	22 00	....	....	614

TABLE XII.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer and Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
	Proprietary Horse Feeds.		Per ct.	Per ct.	Per ct.	Per ct.
*611	Alfalfa Horse Feed. Alfalfa Feed Mills, Phila., Pa.	Philadelphia, Geo. Egolf & Co.	32	9.90	11.56	11.00
*609	Alfalfa Horse Feed. Alfalfa Feed Mills, Phila., Pa.	Philadelphia, P. A. McClain & Co.	30	10.40	11.13	11.00
		Average, ...	....	....	11.35	....
620	Sucrene Horse, Mule and Ox Feed. Amer. Mlg. Co., Phila., Pa.	Lancaster, J. W. Eshelman,	4	17.67	12.10	10.00
893	Sucrene Horse, Mule and Ox Feed. Amer. Mlg. Co., Phila., Pa.	Linesville, Linesville Coal, Lime and Cement Co.	125	11.36	12.45	10.00
		Average, ...	....	....	12.28	....
*610	Ideal Horse Feed. Commonwealth Feed Mills, St. Louis, Mo.	Philadelphia, P. A. McClain & Co.	31	8.65	11.06	12.50
*608	Corno Horse and Mule Feed. Corno Mills, St. Louis, Mo.	Philadelphia, P. A. McClain & Co.	29	9.55	8.75	10.00
957	Primo Hercules Horse Feed. Penna. Primo Feed Co., Harrisburg, Pa.	Carlisle, Hoffman Bros., ...	179	6.44	16.44	15.00
	Proprietary Poultry Foods.					
750	Hen Food. Blank & Gottshall, Sunbury, Pa.	Columbia, C. A. Herr, ...	86	....	10.31	10.63
845	Hen Food. Blank & Gottshall, Sunbury, Pa.	Dubois, S. J. Schrecongast, ..	106	....	10.00	10.63
735	Invigorator Chick Food. Blank & Gottshall, Sunbury, Pa.	Marietta, Stump & Mueller,	71	11.17	10.56	....
630	Chick Food. Samuel Brubaker, Lancaster, Pa.	Lancaster, Sam'l Brubaker,	14	10.24	9.69	7-9
718	Chick Food. Samuel Brubaker, Lancaster, Pa.	Ephrata, J. R. Pott, ...	54	10.98	9.38	7-9
811	Perfect Scratch Feed. A. H. Buehrle, Youngstown, O.	Sharon, J. M. Porter, ...	86	....	11.56	10.50
749	Chick Food. Columbia Milling Co., Columbia, Pa.	Columbia, Columbia Milling Co.	85	11.57	9.56	....
921	Gold Brand Poultry Food. Geo. Craver's Sons, Binghamton, N. Y.	Chambersburg, Walker & Co.	167	8.41	10.75	8-10
771	Developing Food. Cypher's Incubator Co., Buffalo, N. Y.	Reading, H. G. Landis' Sons,	107	11.57	11.81	10.00
643	Chick Food. Cypher's Incubator Co., Buffalo, N. Y.	Lancaster, Sprecher & Ganss.	27	8.51	10.13	10.54
*583	Chick Food. Cypher's Incubator Co., Buffalo, N. Y.	Harrisburg, I. L. Nailor, ..	8	12.87	10.56	10.54
704	Globe Scratch Feed. The Albert Dickinson Co., Chicago, Ill.	New Brighton, M. H. Stager.	37	10.24	11.00	10.50
637	Poultry Feed. J. W. Eshelman, Lancaster, Pa.	Lititz, Elmer Eby, ...	21	10.53	10.75	8-14

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*Sampled before August 1, 1907.
†Per cwt.

FEEDING STUFFS COLLECTED IN 1907—Continued.

Crude Fat.		Crude Fiber.		Price per ton.	Certified Composition.	Ingredients Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
4.77	3.00	7.24	....	$27 00	....	Corn, oats, alfalfa and and brewers' grains.	611
4.42	3.00	7.44	....	26 50	....	Corn, oats, alfalfa and brewers' grains.	609
4.60	....	7.34	....	26 75			
3.63	3.00	10.37	13.50	27 00	Corn, oats, brewers' grains, wheat feed and molasses.	Corn, oats, brewers' grains, molasses and screenings.	620
4.12	3.00	8.23	13.50	25 00	Corn, oats, brewers' grains, wheat feed and molasses.	Corn, oats, brewers' grains, molasses and screenings.	893
3.88	....	9.30	....	26 00			
3.48	3.50	33.99	....	27 00	....	Corn, oats, alfalfa and peanut hulls.	610
3.96	3.50	13.84	....	29 00	....	Corn, oats, oat feed and alfalfa.	608
4.85	4.00	8.56	7.00	38 00	Wheat bran, cracked corn, oats chop, malt sprouts and Oleum Patre preparation. Degerminated.	As certified.	957
2.83	3.29	2.70	4.14	40 00	Wheat, corn, buckwheat, Kaffir corn, mica spar and sunflower seed.	As certified, ...	750
2.78	3.39	2.10	4.14	†1 75	....	Corn, Kaffir corn, wheat, buckwheat, mica spar, grit, sunflower seed, cockle and flaxseed.	845
3.17	....	3.38	....	50 00	....	Corn, millet, wheat, oats, Kaffir corn, charcoal, grit, rice and cockle.	735
3.35	1.5-3	3.97	....	35-37.50	Wheat, corn, millet, grit, oyster shells, Kaffir corn, hominy and bone.	As certified, ...	630
2.74	1.5-3	3.00	....	†2 50	....	Corn, Kaffir corn, millet, wheat, shells, grit, oats and cockle.	718
3.39	3.00	3.22	4.00	†2 00	Corn, wheat, barley, oats, Kaffir corn, buckwheat, sunflower seed, oil cake and charcoal.	As certified, ...	811
2.71	....	3.70	....	38 00	....	Corn, wheat, oats, millet, Kaffir corn, grit and cockle.	749
3.13	2-5	3.35	....	40 00	....	Corn, Kaffir corn, oats, barley, wheat, millet, sunflower seed, buckwheat, mica spar, grit and weed seeds.	921
3.33	3.72	2.75	....	40 00	....	Corn, Kaffir corn, wheat, millet and buckwheat.	771
3.33	3.40	3.94	....	45 00	....	Corn, millet, hulled oats, wheat and Kaffir corn.	643
3.45	3.40	3.19	....	†3 00	....	....	583
3.24	3.00	3.82	4.00	35 00	Oats, wheat, barley, corn, Kaffir corn, buckwheat, sunflower seeds, oil cake, shells, grit and charcoal.	As certified.	704
4.12	2-4	3.72	....	50 00	Wheat, buckwheat, barley, Kaffir corn, oats, millet, corn and sunflower seeds.	Wheat, buckwheat, barley, Kaffir corn, oats, millet, corn, flaxseed and sunflower seeds.	637

TABLE XII.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer and Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein. Found.	Crude Protein. Guaranteed.
				Per ct.	Per ct	Per ct.
1052	Sterling Chick Feed. The Great Western Cereal Co., Chicago, Ill.	Kittanning, Wm. Gates, ..	189	8.08	10.19	12.00
772	Uncle Sam Baby Chick Food. G. L. Harding, Binghamton, N. Y.	Reading, Strunk & Moyer,.	108	11.45	10.31	12-15
732	Monitor Chick Food. Illinois Seed Co., Chicago, Ill.	Coatesville, P. D. Handwork Co., Ltd.	68	....	10.50	10.50
823	Monitor Chick Food. Illinois Seed Co., Chicago, Ill.	Wernersville, G. W. Wertz,	113	10.17	11.19	10.50
793	Phoenix Poultry Feed. Illinois Seed Co., Chicago, Ill.	New Castle, Fisher, Mengle & Co.	68	11.16	11.81	10.50
662	Phoenix Poultry Feed. Illinois Seed Co., Chicago, Ill.	Derry, J. O. Nicely, ...	19	8.89	12.94	10.50
824	Phoenix Poultry Feed. Illinois Seed Co., Chicago, Ill.	Wernersville, G. W. Wertz,	114	9.45	11.13	11.00
936	Reliance Chick Feed. Illinois Seed Co., Chicago, Ill.	Johnstown, McDermott, Wertz & Co.	144	8.30	11.13	10.50
1102	Wish Bone Scratch Feed. J. O. Johnston, Chicago, Ill.	Leechburg, D. Gosser & Sons.	214	7.50	9.69	10.50
1018	A No. 1 Poultry Food. H. J. Klinger & Co., Butler, Pa.	Mars, Mars Milling and Feed Co.	178	9.86	11.69	....
881	Chick Feed. Lancaster Poultry Food Co., Lancaster, Pa.	York, Strayer Bros. & Co.,	151	11.92	10.06	11.20
989	Hen Food. Millard & Scureman, Kingston, Pa.	Plymouth, Davis Bros. & Co.	211	8.45	10.69	....
972	Model Nursery Chick Food. Model Milling Co., Buffalo, N. Y.	Mechanicsburg, A. B. Harnish.	194	9.03	10.88	10.50
975	Model Growing Chick Food. Model Milling Co., Buffalo, N. Y.	Mechanicsburg, A. B. Harnish.	197	9.33	11.31	....
1068	Model Scratch Food. Model Milling Co., Buffalo, N. Y.	Foxburg, Keystone Supply Co.	205	8.94	11.94	12.50
765	Scratching Food. Model Milling Co., Buffalo, N. Y.	Reading, W. T. Snyder, ..	101	11.92	11.44	....
635	Purina Chick Feed. Purina Mills, St. Louis, Mo.	Lancaster, Sprecher & Ganss.	19	8.01	11.56	11.00

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*Per cwt.

FEEDING STUFFS COLLECTED IN 1907—Continued.

Crude Fat.		Crude Fiber.					
Found.	Guaranteed.	Found.	Guaranteed.	Price per ton.	Certified Composition.	Ingredients Identified by Microscopical Examination.	Chief Chemist's number.
Per ct.	Per ct.	Per ct.	Per ct.				
3.03	3.50	2.10	....	*1 60	....	Corn, oats, wheat, millet and charcoal.	1052
2.93	5-7	2.50	....	$50 00	....	Corn, Kaffir corn, wheat and millet.	772
3.26	3.00	4.33	....	50 00	Millet, Kaffir corn, wheat, corn, oats, oyster shells, grit and charcoal.	As certified, ...	732
4.18	3 .00	3.69	....	50 00	Millet, Kaffir corn, wheat, corn, oats, oyster shells, grit and charcoal.	Millet, Kaffir corn, wheat, corn, oats, oyster shells, grit, charcoal, flaxseed, rape seeds and weed seeds.	823
3.27	3.00	4.89	....	*2 00	Wheat, barley, oats, Kaffir corn, buckwheat, millet, sunflower seeds, oil cake, charcoal, oyster shells and grit.	Wheat, barley, oats, Kaffir corn, corn, buckwheat, millet, sunflower seeds, oil cake, charcoal, oyster shells, grit and weed seeds.	793
3.47	3.00	4.35	....	48 00	Wheat, barley, oats, Kaffir corn, buckwheat, millet, sunflower seeds, oil cake, charcoal, oyster shells and grit.	Wheat, barley, oats, Kaffir corn, corn, buckwheat, millet, sunflower seeds, oil cake, charcoal, oyster shells, grit and weed seeds.	662
2.85	3.00	3.60	....	45 00	....	Wheat, barley, oats, Kaffir corn, corn, buckwheat, millet, sunflower seeds, oil cake, charcoal, oyster shells, grit and weed seeds.	824
4.41	3.00	4.24	....	*1 75	Wheat, millet, Kaffir corn, oyster shells and grit.	Wheat, millet, Kaffir corn, corn, flaxseed, oyster shells, grit and weed seeds.	936
2.92	3.00	2.73	....	*1 90	....	Corn, oats, barley, wheat, buckwheat, Kaffir corn, sunflower seeds, mica spar, charcoal and grit.	1102
2.83	....	4.08	....	*2 00	....	Corn, wheat, oats, barley, buckwheat and charcoal.	1018
3.49	3.75	4.48	....	37 50	....	Corn, Kaffir corn, wheat, oats, millet and weed seeds.	881
3.17	....	2.98	....	*2 00	....	Corn, oats, barley, Kaffir corn, buckwheat, wheat, sunflower seeds, peas, oyster shells, grit, charcoal, oil cake, mica spar and cockle.	989
3.23	2.75	2.57	....	50 00	....	Corn, millet, peas, Kaffir corn, flaxseed, wheat and oats.	972
2.37	....	2.20	....	45 00	....	Corn, millet, peas, Kaffir corn, flaxseed, wheat and oats.	975
3.12	2.50	2.60	....	....	....	Corn, oats, wheat, peas, Kaffir corn, barley and weed seeds.	1068
3.38	....	2.62	....	50 00	....	Corn, wheat, oats, Kaffir corn and weed seeds.	765
4.24	3.60	3.62	4.00	40 00	....	Corn, oats, wheat, millet, flaxseed and weed seeds.	635

TABLE XII.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer and Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
			Per ćt.	Per ct.	Per ct.	Per ct.
951	Mash. Purina Mills, St. Louis, Mo.	Johnstown, A. F. Stutzman,	159	7.28	17.38	17.00
910	Mash. Purina Mills, St. Louis, Mo.	Carlisle, Witman-Schwarz Co.	156	8.28	17.44	17.00
†606	American Poultry Food. The Quaker Oats Co., Chicago, Ill.	Washington, C. B. Ruch, ...	27	10.17	12.06	12-14
1050	Schumacher's Scratching Feed. The Quaker Oats Co., Chicago, Ill.	Kittanning, J. A. Gault & Co.	127	7.79	10.63	10.50
1015	Chick Starter. Saginaw Milling Co., Saginaw, Mich.	Butler, Leedom, Worrall & Co.	174	10.63	14.06	....
672	Shield Brand Chick Food. W. G. Scarlett & Co., Baltimore, Md.	Christiana, B. F. Walter, ..	32	9.13	12.31	9.56
†598	Premier Chick Feed. Scobie & Parker, Pittsburg, Pa.	California, J. C. Peffer, ...	19	11.25	9.69	10.50
664	Premier Scratch Feed. Scobie & Parker, Pittsburg, Pa.	Scottdale, F. V. Perry & Co.,	21	9.64	10.13	10.00
†597	Premier Scratch Feed. Scobie & Parker, Pittsburg, Pa.	California, J. C. Peffer, ...	18	10.85	9.81	10.00
751	Chick Feed. Simpson Bros., Norristown, Pa.	Columbia, C. A. Herr, ...	87	10.46	11.19	13.19
840	No. 2 Cereal Chick Feed. Sleepy Eye Mfg. Co., Sleepy Eye, Minn.	Lindsey, Lindsey Milling Co.	101	11.25	14.63	....
		Average, ...	....	....	11.31	....
	Miscellaneous Chops and Mixed Feeds.					
631	Corn and Oats Feed. J. W. Eshelman, Lancaster, Pa.	Lancaster, H. B. Lippold & Bro.	15	9.49	10.00	....
616	Corn and Oats Chop. Foust Bros., Tyrone, Pa.	Tyrone, S. G. Wertz, ...	38	9.02	9.19	7-9
849	Corn and Oats Chop. M. B. Goff, Dubois, Pa.	Dubois, M. B. Goff, ...	110	....	9.25	....
886	Corn and Oats Chop. Mercer Mlg. & Lumber Co., Mercer, Pa.	West Middlesex, Gust Fogal,	118	10.54	10.25	9.56
†589	Corn and Oats Chop. Pierce Milling Co., Pierce, Neb.	Rices Landing, Thomas McGee.	10	11.57	9.56	9-10
†594	Corn, Oats and Barley. American Cereal Co., Chicago, Ill.	Brownsville, C. D. Chamberlain.	15	8.90	10.06	11-12
†603	Corn, Oats and Barley. American Cereal Co., Chicago, Ill.	Washington, J. W. Pinar,..	24	9.40	11.19	10-12
850	Corn, Oats and Barley. Big Run Milling Co., Big Run, Pa.	Big Run, Big Run Mlg. Co.,	111	....	9.13	7-10
776	Corn, Oats and Barley. Imperial Grain & Mlg. Co., Toledo, O.	Beaver Falls, J. G. Allen,..	51	8.67	6.44	8.90
781	Corn, Oats and Barley. Imperial Grain & Mlg. Co., Toledo, O.	Beaver Falls, Dodds & Garrett.	56	....	7.81	8.90
650	C. O. & B. Feed. The Quaker Oats Co., Chicago, Ill.	Greensburg, Hudson & Kuhns.	7	6.50	10.31	10.00

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*Per cwt.
†Sampled before August 1, 1907.
‡Per 47 pounds.

FEEDING STUFFS COLLECTED IN 1907—Continued.

Crude Fat.		Crude Fiber.		Price per ton.	Certified Composition.	Ingredients Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
3.14	5.00	11.42	....	*2 25	....	Cracked corn, wheat bran and alfalfa.	951
2.09	5.00	9.64	....	....	....	Cracked corn, wheat bran and alfalfa.	910
5.08	3.5-4.5	4.32	....	$32 00	....	....	606
3.68	3.00	3.58	7.50	*2 50	Wheat, barley, Kaffir corn, buckwheat, corn, cane seed, oats, sunflower seeds, shells and charcoal.	As certified, ...	1050
2.87	....	3.43	....	*1 90	....	Corn, millet, peas and damaged wheat.	1015
5.64	3.64	6.43	....	50 00	....	Corn, flaxseed, hulled oats, wheat, millet, charcoal and weed seeds.	672
2.85	3.00	3.02	....	50 00	....	....	598
3.26	3.00	3.89	4.00	40 00	Corn, wheat, barley, Kaffir corn, buckwheat, shells, grit, sunflower seeds and charcoal.	As certified, ...	664
3.60	3.00	3.19	....	40 00	....	....	597
4.45	4.45	4.03	3.42	45 00	....	Corn, wheat, rice, millet, oats, charcoal, grit mica spar, meat and cockle.	751
2.39	....	1.52	....	*2 50	....	Wheat, hulled oats, rape seed, vetch seed and weed seeds.	840
3.33	....	3.78	....	43 87			
4.38	....	3.56	....	33 00	Corn and oats, ...	As certified, ...	631
4.34	4-6	4.24	....	30 00	Corn and oats, ...	As certified, ...	616
3.59	....	3.14	....	32 00	Corn and oats, ...	As certified, ...	849
3.46	3.35	3.58	4.34	§0 80	Corn and oats, ...	Corn, oats and wheat tissues.	886
3.88	3-4	2.47	....	32 00	Corn and oats, ...	As certified, ...	589
4.65	4-5	11.24	....	27 00	Corn, oats and barley, ..	As certified. Excess of oat hulls.	594
3.40	4-5	....	....	24 00	Corn, oats and barley, ..	As certified. Excess of oat hulls.	603
3.87	2-5	2.27	....	....	Pure corn, oats and barley.	As certified, ...	850
2.33	3.70	13.79	11.75	30 00	Shelled and ear corn, oats, barley, wheat flour, oat middlings, oat bran and oat hulls.	As certified, ...	776
3.09	3.70	12.54	11.75	34 00	Shelled and ear corn, oats, barley, wheat flour, oat middlings, oat bran and oat hulls.	As certified, ...	781
4.84	4.00	11.08	10.00	30 00	Corn, barley, wheat flour, oat middlings, oat shorts and oat hulls.	Corn, wheat flour, oat middlings, oat shorts and oat hulls.	650

TABLE XII.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer and Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
			Per ct.	Per ct.	Per ct.	Per ct.
1017	C. O. & B. Feed. The Quaker Oats Co., Chicago, Ill	Renfrew, L. D. Van Rensselear.	177	8.30	11.31	10.00
699	C. O. & B. Chop. The Toledo Grain & Mlg. Co., Toledo, O.	Rochester, Rochester Seed & Supply Co.	32	9.70	7.94	7.5-9
852	C. O. B. K. Chop. The Toledo Grain & Mlg. Co., Toledo, O.	Big Run, L. A. Shaffer, ...	113	....	8.25	8.5-10
847	Corn, Oats and Barley. Victor Mills, Springville, N. Y.	Dubois, R. C. Bundy & Co.,..	108	....	8.94	7-10
842	Corn, Oats and Barley. Victor Mills, Springville, N. Y.	Dubois, A. T. Sprankle, ...	103	....	8.50	7-10
1060	Chop. A. Affolter, Parkers Landing, Pa.	East Brady, S. C. Wallace & Son.	197	10.07	9.44	7-10
1040	No. 1 Chop. The Babcock Co., Scranton, Pa.	Scranton, The Babcock Co.,..	243	9.61	10.19	9.25
796	Chop. City Roller Mills, New Castle, Pa.	New Castle, City Roller Mills.	71	....	10.69	....
876	Mixed Chop. C. H. Day, Brillharts, Pa.	York, E. E. Johnston & Co.,	146	....	9.56	8-16
†595	Chop. Eclipse Milling Co., Brownsville, Pa.	Brownsville, Brownsville Supply Co.	16	10.38	10.50	7-10
1069	Chop. Emlenton Milling Co., Emlenton, Pa.	Foxburg, H. H. Porterfield,	206	10.12	10.13	9.63
1029	Mixed Chop. G. W. Engle, Hazleton, Pa.	Hazleton, G. W. Engle, ...	232	9.68	8.31	2.00
1058	Chop. Wm. Fairlie, East Brady, Pa.	East Brady, Wm. Fairlie, ..	195	6.71	10.94	....
615	Chop. Fouss Brothers, Tyrone, Pa.	Tyrone, G. S. Wertz, ...	37	7.72	9.44	9-11
984	Mixed Chop. James Fowler & Sons, Wyoming, Pa.	Wilkes-Barre, Evans Bros. & Co.	206	10.55	9.08	7.81-9
612	Boss Chop Feed. Great Western Cereal Co., Chicago, Ill.	Philadelphia, Geo. Egolf & Co.	33	10.10	7.91	8.50
821	Boss Chop Feed. Great Western Cereal Co., Chicago, Ill.	Reading, G. M. Krick, ...	111	8.84	8.31	....
†596	Chop. A. Hayden, Elizabeth, Pa.	California, Valley Supply Co.,	17	9.30	10.25	....
1126	Monarch Chop. Husted Mill & Elev. Co., Buffalo, N. Y.	Knoxville, F. J. Sherer, ...	296	8.57	8.81	7.5-9
1098	Premium Chop. Imperial Grain & Mlg. Co., Toledo, O.	Leechburg, Leechburg Milling Co.	210	8.17	7.44	8.00
954	No. 1 Chop. Imperial Grain & Mlg. Co., Toledo, O.	Johnstown, Penn Traffic Co.,	162	9.61	9.63	9.00
708	Chop. Karcher Bros., Rochester, Pa.	New Brighton, J. A. Duey,..	41	10.48	9.63	14-17
819	Chop. Mathers Bros., Greenville, Pa.	So. Sharon, Slater & Custard.	94	....	10.31	8.71
891	Chop. Geo. E. McQuiston & Co., Jamestown, Pa.§	Greenville, Hecker & Reed,	123	9.64	10.50	....
958	Mixed Chop. Miner-Hillard Mlg. Co., Plymouth, Pa.	Plymouth, Chamberlain & Co.	210	10.09	8.75	8-11
663	Mixed Chop. F. V. Perry & Co., Scottdale, Pa.	Scottdale, F. V. Perry & Co.	20	9.15	9.25	8.00
790	Chop. Raney & Co., Mahoningtown, Pa.	New Castle, John Allen, ...	65	....	10.88	9.75

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*Per cwt.
†Sampled before August 1, 1907.
‡Per 47 pounds.
§Statement of dealer.

FEEDING STUFFS COLLECTED IN 1907—Continued.

Crude Fat.		Crude Fiber.		Price per ton.	Certified Composition.	Ingredients Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
4.13	4.00	11.25	10.00	*1 85	Corn, barley, wheat flour, oat middlings, oat shorts and oat hulls.	As certified, ...	1017
3.37	3.5-4.5	7.24	....	$30 00	....	Ear corn, oat hulls and barley.	699
3.37	3.4-4.4	4.58	....	*1 60	....	Shelled and ear corn, barley, oats and oat feed.	852
3.51	4-6	6.68	....	*1 68	Corn, oats and barley, ..	As certified, ...	847
3.52	4-6	7.78	....	30 00	Corn, oats, and barley, ..	As certified, ...	842
3.99	2-5	3.07	....	....	Corn and oats, ...	As certified, ...	1060
3.80	3.50	5.13	5.64	32.00	Corn and oats, ...	As certified, ...	1040
3.67	....	3.29	....	....	Shelled corn and oats, ..	Corn, oats and wheat tissues.	796
3.81	2-4	2.35	6-8	36 00	....	Corn, oats and rye, ...	876
3.75	2-5	4.16	....	30 00	....	....	595
4.60	4.21	3.11	....	‡0 85	Corn and oats, ...	As certified, ...	1069
3.26	0.20	8.24	0.10	27 00	80 per cent. hominy meal, 10 per cent. ground corn cob meal, 10 per cent. molasses grains.	Hominy feed, ground corn cobs, molasses, brewers' grains and rice hulls.	1029
4.29	....	3.60	....	....	Corn and oats, ...	As certified, ...	1058
3.16	5-6	3.83	....	30 00	....	....	615
3.32	3.28-5	4.18	5-7	....	....	Corn, oats and rye, ...	984
3.82	3.50	11.19	....	27 00	....	Corn, oats and oat hulls,	612
3.52	....	11.07	11.00	31.00	Corn, hominy feed, oats, oat middlings, oat dust and oat hulls.	As certified, ...	821
3.95	....	4.20	....	32 00	....	....	596
3.79	3.5-4.5	8.26	9-14	31 00	Corn meal and oat feed,	As certified, ...	1126
3.33	3.50	13.09	12.00	30 00	Shelled and ear corn, wheat flour, oat bran, oat middlings, oat hulls and white hominy meal.	As certified, ...	1098
4.12	4.75	2.38	5.00	34 00	Corn and oats, ...	As certified, ...	954
3.59	3.6	2.61	....	....	....	Corn and oats, ...	708
3.69	4.00	3.70	....	....	....	Corn and oats, ...	819
4.17	....	3.59	....	....	....	Corn and oats, ...	891
3.52	4-6	5.59	5-6	32 00	Corn, wheat middlings and oat bran.	As certified, ...	988
3.92	4.00	5.20	....	28 50	Ear corn, oats and wheat screenings.	As certified, ...	663
3.84	3.58	3.32	....	38 00	....	Corn, wheat middlings and oats.	790

TABLE XII.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer and Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein. Found.	Crude Protein. Guaranteed.
				Per ct.	Per ct.	Per ct.
804	Chop. Raney & Co., Mahoningtown, Pa.	Mahoningtown, Raney & Co.,	79	....	11.19	....
1055	Chop. Riverview Milling Co., Kittanning, Pa.	Kittanning, G. W. Fennell,	192	8.22	10.38	8-12
983	No. 1 Chop. Robbins Milling Co., Wilkes-Barre, Pa.	Wilkes-Barre, Kirkendall Son & Co.	205	9.77	9.88	10.02
982	No. 2 Chop. Robbins Milling Co., Wilkes-Barre, Pa.	Wilkes-Barre, Kirkendall Son & Co.	204	7.79	9.25	8.83
766	Horse Chop. Seaboard Mills, Reading, Pa.	Reading, D. W. Dietrich, ..	102	....	12.63	7.00
815	Chop. The Sharon Milling Co., Sharon, Pa.	Sharon, The Sharon Milling Co.	90	....	10.25	....
644	Chop. Wm. Shoemaker & Co., Greensburg, Pa.	Greensburg, Wm. Schomaker & Co.	1	9.29	9.19	7-10
899	Chop. D. D. Simison, Volant, Pa.	Grove City, J. W. McCandless.	131	10.15	11.38	13.04
786	Chop. D. D. Simison, Volant, Pa.	New Castle, P. Wagner & Son.	61	....	9.50	13.04
*588	Chop. J. F. Stanton & Sons, New Stanton, Pa.	Masontown, Unity Mercantile Co.	9	13.07	9.25	6-10
*592	A Yellow Chop. Toledo Grain & Milling Co., Toledo, O.	Brownsville, C. D. Chamberlain.	13	10.55	8.75	8.18
700	A Yellow Chop. Toledo Grain & Milling Co., Toledo, O.	Rochester, Rochester Seed & Supply Co.	39	10.28	8.75	7-8.5
835	A Yellow Chop. Toledo Grain & Milling Co., Toledo, O.	Punxsutawney, T. C. Zeitler.	96	9.68	8.69	8.18
*591	No. 1 Yellow Chop. Toledo Grain & Milling Co., Toledo, O.	Brownsville, C. D. Chamberlain.	12	10.25	8.69	8.576
794	Keystone Chop. Toledo Grain & Milling Co., Toledo, O.	New Castle, Fisher, Mengle & Co.	69	11.51	8.81	8.5-10
1010	Fresh Ground Chop. Toledo Grain & Milling Co., Toledo, O.	Butler, B. F. Shannon & Co.	169	8.66	8.75	....
*593	Victor Corn and Oat Feed. Amer. Cereal Co., Chicago, Ill.	Brownsville, C. D. Chamberlain.	14	8.52	7.50	7.5-9
*599	Victor Corn and Oat Feed. Amer. Cereal Co., Chicago, Ill.	Washington, G. W. McBrier,	20	9.95	7.38	7.5-9
1099	Victor Feed. The Quaker Oats Co., Chicago, Ill.	Leechburg, D. Gosser & Sons,	211	5.93	8.75	7.50
1106	Victor Feed. The Quaker Oats Co., Chicago, Ill.	Apollo, N. H. Gosser, ...	218	8.46	8.88	7.50
1108	Victor Feed. The Quaker Oats Co., Chicago, Ill.	Towanda, M. J. Long, ...	278	8.88	8.25	7.50
705	Victor Feed. The Quaker Oats Co., Chicago, Ill.	New Brighton, Jacob Reinehr.	38	8.33	8.38	7.50
1016	Victor Feed. The Quaker Oats Co., Chicago, Ill.	Renfrew, L. D. Van Rensselear.	175	8.61	8.19	7.50
848	Mixed Feed. Dubois Roller Mills, Dubois, Pa.	Dubois, Dubois Roller Mills,	109	....	12.63	8.88
1031	Feed. Kizer Mill & Elevator Co., Scranton, Pa.	Dunmore, H. P. Freas, ...	234	9.55	9.56	8.60
1047	No. 2 Feed. Kizer Mill & Elevator Co., Scranton, Pa.	Scranton, Kizer Mill & Elev. Co.	250	9.62	9.88	8.60
1044	Mixed Feed. C. P. Mathews & Sons, Scranton, Pa.	Scranton, Chas. Neuls, ...	247	9.48	10.06	7-9
1035	P. & S. Feed. Phelps & Sibley Co., Cuba, N. Y.	Carbondale, C. Ditchburn's Sons.	238	9.09	8.75	7.50

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*Sampled before August 1, 1907.
†Per cwt.

FEEDING STUFFS COLLECTED IN 1907—Continued.

Crude Fat.		Crude Fiber.		Price per ton.	Certified Composition.	Ingredients Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct	Per ct	Per ct	Per ct.				
4.70	....	3.25	....	....	Corn, wheat middlings and oats.	As certified, ...	804
3.88	2-5	1.73	....	....	Corn and oats, ...	As certified, ...	1055
3.44	6.36	4.93	....	$31 00	....	Corn, oats and rye, ...	983
3.78	6.31	3.99	....	29 00	....	Corn, oats and rye, ...	982
3.85	3.00	3.39	....	30 00	....	Corn, oats and wheat, ..	766
4.34	....	2.89	....	33 00	Corn and oats, ...	As certified, ...	815
3.90	2-5	2.86	....	30 00	....	....	644
4.28	4.31	3.51	....	....	....	Corn, oats and wheat, ...	899
4.01	4.31	3.32	....	....	....	Corn, oats and wheat, ...	786
3.55	1-5	2.54	....	30 00	....	....	588
4.50	3.43	5.24	....	23 00	....	....	592
3.87	3-4	6.26	....	29 00	....	Corn, corn cob, oat hulls and barley.	700
3.94	3.43	4.76	....	32 00	....	Shelled and ear corn, oats and oat hulls.	835
3.68	3.716	6.75	....	24 00	....	....	591
3.42	3.4-4.4	5.59	....	32 00	....	Shelled and ear corn, wheat flour, oats and oat hulls.	794
3.44	....	5.59	....	31 00	....	Shelled and ear corn and oats.	1010
4.03	3-4	12.64	....	22 00	....	....	593
4.08	3-4	....	....	27 00	....	....	599
3.79	3.00	11.55	12.00	30 00	Corn, oat middlings, oat shorts and oat hulls.	As certified, ...	1099
4.81	3.00	10.82	12.00	30 00	Corn, oat middlings, oat shorts and oat hulls.	As certified, ...	1106
3.44	3.00	9.29	12.00	32 00	Corn, oat middlings, oat shorts and oat hulls.	As certified ,.............	1108
4.03	3.00	10.44	12.00	29 00	Corn, oat middlings, oat shorts and oat hulls.	As certified, ...	705
3.89	3.00	12.18	12.00	†1.80	Corn, oat middlings, oat shorts and oat hulls.	As certified, ...	1016
3.15	3.81	4.12	....	....	....	Corn and malt sprouts, ..	848
4.66	3.25	4.78	8.00	28 00	....	Corn and oat tissues. Probably corn, hominy and oat feed.	1031
4.60	3.25	4.86	8.00	29 00	Hominy, cracked corn siftings, whole corn, oat tailings and oat hulls.	As certified, ...	1047
4.89	4-6	4.79	5-6	29 00	Hominy, corn and oat feed.	As certified, ...	1044
3.98	2.00	6.02	....	29 00	....	Corn and oat hulls. A few oat starches.	1035

TABLE XII.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer and Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein. Found.	Crude Protein. Guaranteed.
				Per ct.	Per ct.	Per ct.
1043	Mixed Feed. Seybolt Milling Co., Scranton, Pa.	Scranton, M. Dinner, ...	246	9.90	9.75	8.81
874	Star Feed. The Toledo Elevator Co., Toledo, O.	York, John Keasey & Sons,	144	....	7.44	7.00
1027	Star Feed. The Toledo Elevator Co., Toledo, O.	Hazleton, J. G. Seager's Sons.	230	8.58	7.56	7.00
722	Star Feed. The Toledo Elevator Co., Toledo, O.	Parkesburg, Brinton Walter,	58	9.02	7.94	7.00
675	Corn, Oats and Bran. B. F. Walter, Christiana, Pa.	Christiana, B. F. Walter, ..	35	10.16	11.13	....
753	Mixed Feed. Wertz Milling Co., Reading, Pa.	Reading, A. C. Wertz & Bro.	89	....	10.75	6-10
1042	Feed. Woodhouse & Tiel, Scranton, Pa.	Scranton, Ziman Bros., ...	245	8.32	10.44	9.20
	Miscellaneous Feeds.					
1005	Dried Beet Pulp. Alma Sugar Co., Alma., Mich.	Butler, H. J. Klingler & Co.	164	7.50	9.00	8.50
931	Dried Beet Pulp. Alma Sugar Co., Alma, Mich.	Johnstown, Swope Bros., ...	139	9.64	8.69	8-10
746	Dried Beet Pulp, Larrowe Milling Co., New York, N. Y.	Coatesville, P. D. Handwork Co., Ltd.	82	....	9.00	8.50
668	Rye Feed. M. F. Baringer, Philadelphia, Pa.	Manheim, B. R. Hollinger,	28	8.22	14.69	14.00
1122	Rye Feed. The Birkett Mills, Penn Yan, N. Y.	Knoxville, Knoxville Tobacco Co.	292	6.89	16.90	10.40
1120	Buckwheat Feed. The Birkett Mills, Penn Yan, N. Y.	Wellsboro, B. Schrader & Son.	290	6.64	19.65	9.50
990	Buckwheat Middlings. Miner-Hillard Milling Co., Plymouth, Pa.	Plymouth, Miner-Hillard Milling Co.	212	11.06	20.94	....
844	Bran. Crouch Bros. Co., Erie, Pa.	Dubois, S. J. Schrecongast,	105	....	15.31	14.17
880	Bird Food. C. L. Hirsh & Co., New York, N. Y.	York, H. G. Fickes, ...	150	....	14.81	....
761	Bird Food. National Mills, New York, N. Y.	Reading, H. G. Landis' Sons,	97	....	12.75	....
986	Bird Food. National Mills, New York, N. Y.	Plymouth, M. J. Mras, ...	208	8.39	11.06	....
759	Pigeon Feed. Keystone Poultry Supply Co., Lancaster, Pa.	Reading, Eshelman Bros., ..	95	12.00	12.25	8-14
758	Ogemaw A. A. Pigeon Feed. Saginaw Milling Co., Saginaw, Mich.	Reading, Eshelman Bros., .	94	11.90	14.50	13-16
1025	White Middlings. Mauser Mill Co., Laurys, Pa.	Hazleton, J. & C. J. Kirschner.	228	8.02	16.31	14.18
729	Middlings. E. Vinton Philips, Downingtown, Pa.	Downingtown, E. Vinton Philips.	65	11.27	12.50	6.00
768	Mixed Middlings. Seaboard Mills, Reading, Pa.	Reading, D. W. Dietrich, ..	104	....	13.75	6.00
762	Cat Food. Spratts Patent, Newark, N. J.	Reading, H. G. Landis' Sons,	98	....	24.37	....
763	Fish Food. Spratts Patent, Newark, N. J.	Reading, H. G. Landis' Sons,	99	....	8.75	....
	ANIMAL BY-PRODUCTS.					
773	3 Medal Poultry Meat. The Berg Co., Philadelphia, Pa. Co., New York, N. Y.	Reading, Strunk & Moyer,	109	....	59.81	40-50
826	Animal Meal. The Bowker	Wernersville, G. W. Wertz,	116	....	27.05	40.00

FEEDING STUFFS COLLECTED IN 1907—Continued.

Crude Fat.		Crude Fiber.		Price per ton.	Certified Composition.	Ingredients Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct.	Per ct.	Per ct.	Per ct.				
3.70	5.80	2.80	....	$30 00	....	Corn and oats, ...	1043
4.77	6.00	9.94	12.50	29.00	Hominy feed, corn and cob meal.	As certified, ...	874
4.89	6.00	11.67	12.50	28 00	Hominy feed, corn and cob meal.	As certified, ...	1027
5.31	6.00	10.45	12.50	28.00	Hominy feed, corn and cob meal.	As certified, ...	722
4.67	....	7.07	....	28 00	Whole oats, cracked corn and bran.	As certified, ...	675
3.51	2-5	3.53	....	32 00	....	Corn, oats, rye bran and rye middlings.	753
3.79	6.10	3.51	....	30 00	....	Corn and oats, ...	1042
0.72	0.50	19.03	....	24 00	Dried beet pulp, ...	As certified, ...	1005
0.85	0.4-0.6	19.13	17.50	24 00	Dried beet pulp, ...	As certified, ...	931
0.51	0.50	20.18	17.50	22 00	Dried beet pulp, ...	As certified, ...	746
3.71	3.00	6.65	9.00	28.00	Pure rye feed, ...	As certified, ...	668
4.08	1.72	5.08	....	32.00	Choice rye feed, ...	As certified, ...	1122
4.93	3.25	22.17	....	25 00	....	Ground buckwheat, with excess of buckwheat hulls.	1120
2.50	....	3.55	....	32 00	Buckwheat middlings, ...	As certified, ...	990
4.72	3-6	9.29	....	30 00	Wheat and rye bran, ...	As certified, ...	844
12.12	....	8.40	....	....	....	Millet, rape seed, Sicilian canary seed, oil cake, cuttle fish and barley.	880
7.02	....	7.69	....	....	....	Millet, rape seed, Sicilian canary seed, hemp seed and cuttle fish.	761
6.11	....	7.35	....	....	....	Sicilian canary seed, millet, wheat, barley, rape seed, cuttle fish and unidentified mineral substance.	986
4.24	2-4	2.97	....	48 00	....	Corn, wheat, buckwheat, Kaffir corn, flaxseed, peas, oats, millet and cockle.	759
2.96	2.75-3.75	4.13	3.5-5	50 00	....	Wheat, oats, Kaffir corn, millet, buckwheat, beans, peas, hemp seed and cockle.	758
4.20	4-7	3.99	....	30 00	Wheat and rye middlings,	As certified, ...	1025
2.36	5.00	2.92	....	30 00	....	Wheat and rye middlings,	729
3.48	3.00	3.82	....	28 00	Wheat and rye middlings.	As certified, ...	768
8.02	....	1.79	....	....	....	Meat and bread refuse, ..	762
0.39	....	0.58	....	....	....	Starchy matter, ...	763
12.42	10-15	....	....	45 00	....	Meat and bone, ...	773
18.30	5.00	....	....	....	Animal meal, ...	Animal meal and bone, ..	826

TABLE XII.—ANALYSES OF SAMPLES OF

Chief Chemist's number.	Name of Feeding Stuff and Name and Address of Manufacturer and Importer.	Sampled at	Agent's number.	Moisture.	Crude Protein.	
					Found.	Guaranteed.
			Per ct.	Per ct.	Per ct.	Per ct.
970	Model Beef Scraps. Model Milling Co., Buffalo, N. Y.	Mechanicsburg, A. B. Harnish.	192	....	61.64	63.00
947	Beef Poultry Ration. The E. H. Shuster Co., North Woodbury, N. J.	Johnstown, John Thomas & Sons.	155	9.20	46.74	46.22
	CONDIMENTAL STOCK AND POULTRY FOODS.					
632	Chick Manna. F. P. Cassel, Lansdale, Pa.	Lancaster, Sprecher & Ganss,	16	10.37	12.31	12-14
633	International Stock Food. International Stock Food Co., Minneapolis, Minn.	Lancaster, Sprecher & Ganss,	17	10.83	12.81	....
634	Pratt's Poultry Food. Pratt Food Co., Philadelphia, Pa.	Lancaster, Sprecher & Ganss,	18	7.59	7.94	....
648	U. S. Poultry Food. The U. S. Food Co., Pleasant City, O.	Greensburg, J. W. Pollins & Co.	5	10.54	23.44	....

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*Per cwt.
†Per pound.
‡Including sulphur.

FEEDING STUFFS COLLECTED IN 1907—Concluded.

Crude Fat.		Crude Fiber.		Price per ton.	Certified Composition.	Ingredients Identified by Microscopical Examination.	Chief Chemist's number.
Found.	Guaranteed.	Found.	Guaranteed.				
Per ct	Per ct.	Per ct	Per ct.	Per ct.			
9.03	10.00	....	....	$58 00	Beef scraps, ...	Meat and bone, ...	970
18.52	17.48	....	....	*3 00	Beef scraps, ...	Meat and bone, ...	947
4.42	4-5	2.54	....	†0.10	....	Corn, hulled oats, crackers, wheat middlings, gentian, ginger, meat, bone, anise, starch, sulphur, copperas and salt.	632
3.63	....	10.66	....	†0.14	....	Wheat middlings, charcoal, pepper, salt and saltpeter.	633
‡2.27	....	18.84	....	†0.20	....	Wheat bran, corn bran, rice hulls, Venetian red, sulphur, salt, carbonates and probably fenugreek.	634
‡5.04	....	6.73	....	†0.17	....	Wheat middlings, oil cake, gentian, fenugreek, sulphur, salt, copperas, Venetian red and Epsom salts.	648

THE FEEDING STUFF LAW OF PENNSYLVANIA.

Its Relation to Pennsylvania Millers*.

By F. D. FULLER, Chief Chemist, Pennsylvania Department of Agriculture.

Members of the Pennsylvania Millers' State Asociation, Ladies and Gentlemen: I consider it an especial honor to have been invited to address you upon a subject which is of great interest to you ali, and one which has attracted considerable attention throughout the State during the past few months, owing to the fact that the new Pennsylvania law regulating the sale of commercial feed stuffs became operative August 1st. In this act there are provisions of material advantage to the miller producing and selling straight mill feed. Before discussing these, however, I wish to digress a little from the subject and take up in a general way certain points which may not be altogether new to you, but which, I trust will be interesting.

First of all, I want to congratulate you in the choice of your occupation. From the earliest times the wheat plant has furnished the choicest grain food for man. A kind Providence has given you the wheat berry and you are, by means of complicated machinery, removing therefrom the material which, when properly utilized, furnishes the staff of life to millions of people throughout the world.

The ancient Egyptians lived upon barley, sorghum seed, lupines and horse beans. Esau's mess of pottage was hulled lupines. Our New England forefathers ate buckwheat and "rye and Indian," which was a mixture of rye and corn meal. To be sure there are certain classes of people, especially those reared in some of the foreign countries, that require rye bread, and the New Englander of to-day knows that nothing can take the place of Johnny cake and his meal of brown bread and beans. In my boyhood days on the old New Hampshire farm, I remember with what satisfaction I sat down to a meal of brown bread and baked beans every Saturday night and Sunday morning, and nothing tasted so good to me on Sunday night as a bowl full of brown bread and rich Jersey milk.

The milling of wheat is an enormous business and the capital invested in milling is second only to that invested in transportation and the steel industry. Regardless of the great developments of wheat production in other sections of the world, Europe still produces more than half the wheat of the world, and its production continues to increase in a substantial manner. According to Prof. Hunt, Russia, France and Austria-Hungary are the largest wheat producing countries of Europe. Second in importance to these are Germany, Spain and Italy. The United States and India are the only other large wheat producing countries. The Canadian Northwest is distinguished for its large yield per acre combined with high quality of the grain. The United States raises the most wheat of any nation on the globe, and the largest yield ever produced in a single year was 748,000,000 bushels in 1901. During the last fifty years the production of wheat has increased six and one-half times. This progress is the result of reduced cost of production and handling through the introduction of labor-saving machinery and the extension of railway construction. The milling industry of the United States has a product value of $560,000,000, and according to the last census, there were then 25,258 establishments, representing an investment of $218,000,000, or an average of $10,000 per establishment, giving employment to 5,790 salaried officials and clerks and 37,000 wage earners. The consumption of wheat for milling purposes, as shown by the 1900 census, is 490,000,000 bushels; of corn, 241,000,000 bushels; of rye, 13,000,000 bushels; of buckwheat, 8,000,000 bushels. It should, therefore, be a matter of great satisfaction to each one of you when you realize to what extent you are assisting in converting wheat berries into patent flour and furnishing by-products which stand high in value as food for domestic animals.

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*Read before the Thirteenth Annual Convention of Pennsylvania Millers' State Association, Lancaster, Pa., Sept. 25, 1907.

You all know the process of evolution through which milling machinery passed before it reached its high state of perfection where we find it to-day. It would not be germane at this time to speak at length upon the different methods which have been employed in the milling of wheat, but it will be appropriate to simply mention, in passing, three methods: First, the primitive method, in which the mortar and pestle performed the work by forcible contact. Second, the use of burr stones, which was the method of milling wheat in the United States until about thirty years ago. These stones not only cut but crushed the wheat berry, and third, the roller process that is used in the largest mills to-day. After the wheat is mashed between hardened steel rollers, the different parts of the grain are separated, partly by gravity and partly by bolting cloth of different sized meshes. In the old process of roller milling, the wheat was ground as finely as possible and then bolted. But by the addition of the purifier, in 1870, the process of milling was revolutionized and it made it possible to utilize the hard spring wheats of the Northwest of the highest value, while formerly they were of the least value for the production of high grade flour. The wheat is first ground, resulting in three products: low grade flour, middlings and bran. The middlings are now put through the purifier in order to remove dirt, bran and foreign matter. They are then ground and finally bolted. It is from these purified middlings that the highest grade of flour is made. In producing flour the object of the miller is to secure all of the starch and gluten possible, avoiding the other constituents of the grain. He refuses to include the germ, because it turns dark on exposure to the air and gives the flour a speckled appearance. The presence of the aleurone layer, though rich in protein, gives the flour a brown tint. These offals or by-products of wheat known chiefly as bran, shorts, middlings and low grade flour, constituting from 25 to 40 per cent. of the weight of the wheat berry, therefore become available as food for domestic animals. Undoubtedly within the memory of many of you the bran spout of grist mills emptied its contents into the river. At the present time no commercial feeding stuffs are regarded with greater favor or are more widely and largely purchased by American feeders than the by-products from the manufacture of flour. Although wheat bran, at one time, was thought to possess no more value than saw dust, it is to-day the corner stone upon which the intelligent feeder depends to furnish strength to the superstructure which we will call the feeding ration. As Prof. Smith, of Michigan, has well said, "The value of a feeding stuff can hardly be measured by analysis, even when that analysis is accompanied by careful digestion experiments. Other factors of supreme importance are to be considered in measuring a food besides its chemical composition and its digestibility, and ultimate effect of food upon the animal is not measured by its chemical composition and digestibility alone." The characteristics and peculiar qualities of the food itself are of great importance. "There are feeding stuffs that are richer in protein, but none of them possess that peculiar adaptability to the wants of the dairy cow, that characterize wheat bran." Wheat bran is a leading feed for dairy cows because it furnishes not only bulk, but protein and ash which are greatly needed in the formation of milk.

I have brought to your attention certain facts which are sufficient to show you that the milling industry is one of the largest in many ways, in the United States, and its products are of enormous value to the civilized world. What relation, then, does the Pennsylvania Feeding Stuff Law bear to the miller producing and selling straight mill feed?

Before discussing this point, I wish to emphasize the importance of various laws regulating the manufacture and sale of certain commodities. The inspection of certain articles of merchandise has been practiced in this country for many years. Coal oil, salt, etc., have been for years subjected to rigid inspection. Many years ago Germany formulated a law providing for the examination of the various brands of fertilizers found on the markets, fixing penalties for the violation of the same, due to adulteration or misbranding. The line of work which was instituted in Germany, for the benefit of farmers, was soon taken up by the prominent agriculturists of this country and we soon find on the statute books of Connecticut an act regulating the sale of commercial fertilizers, which is similar to the German law. The examination of fertilizers has spread from this New England State to practically every State in the Union. Why are these laws necessary, and of what value are they to the farmer? It was found that in order to protect the purchaser of fertilizers against frauds and cheap articles at exorbitant prices, a law was needed which would require manufacturers of fertilizers to place on each package a guaranteed statement showing the percentages of valuable plant food constituents and also providing means for the chemical control of these articles by the State. In some States the expense of this work is met by appropriation, in others by a license fee on each brand of fertilizer offered for sale in the State, this fee being paid by the manufacturer or dealers. These laws have been so effectual in correcting the former condition of the markets that one rarely finds much deception and fraud in the fertilizer business at the present time, so that, by reason of this fact, we are safe in saying that thousands of dollars are annually saved to the farmers of the Commonwealth. I realize, however, that you are only indirectly interested in the question of the purity and value of fertilizers, but we must remember that the prosperity of the United States as a whole, is in direct proportion to the prosperity of its farmers, and you, as millers, cannot prosper unless the farmer, who furnishes the golden grain, is reaping an abundant harvest.

Connecticut was the pioneer State in recognizing the importance of demanding that commercial feeding stuffs shall be subject to legal control, and in 1895 such a law was enacted in that State. Massachusetts, Maine and other New England States followed the example, and similar laws were passed during the following years. At the present time, feedings stuff laws are on the statute books of many States, among which are the following: New York, Pennsylvania, New Jersey, Maryland, Michigan, Wisconsin, Louisiana, Virginia, Oklahoma, Ohio, Texas, Tennessee, North Carolina, Florida, Indiana and the New England States.

Why is it that so many States have enacted feeding stuff laws and at the present time the demand for and need of such laws is greater than at any former time? The consumer of commercial feeding stuffs is beset on every hand, with new articles, new in name if not in kind, and the value of which is questionable. Is it surprising that the farmer is perplexed when he goes into the market to select a food best suited to his needs? As a result of the close competition between manufacturers and the more complete utilization of by-products, we find on the market a large number of cheap articles, either adulterated goods or compounded feeds containing a large percentage of low grade material.

There are three good reasons for claiming that commercial feeding stuffs should be subject to legal control. First, the temptation to adulterate is more powerful to-day than ever before. Second, trade names or distinctive names are deceptive and a statement of the real percentages of protein, fat and fiber present in the material must accompany the sale of such articles in order to throw any light upon their value. Third, the composition of feeds vary according to differences in the processes of manufacturing. There are manufactured to-day from the cereals, a large variety of breakfast foods. Many are oat preparations and the offals, composed of light oats and oat hulls, which are discarded, are used as cattle food in such materials as chops, mixed feeds, oat feeds, corn and oat feeds, etc.

The time has come when the American public should be warned of one thing above everything else and that is as to the true character of these articles known as "oat feeds," with some proprietary name attached. A little Jew boy was standing in front of his father's store one day, and he came in and said, "Father, there is a lot of little birds out in front there saying cheep, cheep, cheep." He says, "Ikey, go and get those birds and put them in the window so that they may say cheap, cheap to people." This "cheap, cheap" proposition, to many of our ill-informed dairymen, is the main proposition, but they are practically throwing their money away.

An act of the General Assembly of Pennsylvania was approved by the Governor on April 25, 1901, which regulated the sale of commercial feeding stuffs. This act was similar to other feeding stuff laws and provided that the sale of practically all feeds, with few exceptions, must be accompanied with certain printed statements, including the guaranteed percentages of crude protein and fat. An amendment to the law was approved by the Governor, April 24, 1905, and so extended the definition of the term "Concentrated Commercial Feeding Stuffs" as to include, among other articles, "wheat, rye and buckwheat bran and middlings," in other words, these by-products from wheat, rye and buckwheat when sold at any other place in the State than at the mill where manufactured, should have the guaranteed percentages of protein and fat printed upon the package or on a tag attached to the package.

During the year 1905, the quality of feeds on the market in this State was very poor. Many feeds were not branded, and when guarantees were given, many exceeded the actual analysis. It is gratifying to note that owing to the rigid enforcement of the law during 1905, and through the publication of the results of analyses of samples, together with such additional information as circumstances advised, the quality of many of our feeding stuffs in the market in 1906 was greatly improved, correct guarantees were more frequent and materials which heretofore had been sold without any guarantee, were properly labeled according to the provisions of the law. In view of the fact that an immense quantity of commercial feeding stuffs are annually sold in Pennsylvania, we believe that each year thousands of dollars are being saved to consumers of these materials, because of the improvement in the feed situation.

Notwithstanding the fact that the 1901 act was of great benefit to the agricultural class and manufacturers producing an honest article, there seemed to be a demand for a new law which would give more relief from adulterated goods and inferior articles selling at prices far in excess of their real value. Just as long as these articles remain on the market and enter into competition with straight goods put out by reputable millers, just so long will the Pennsylvania miller be handicapped in the honest business of manufacturing and selling straight mill feeds. In response to the demand referred to, the present feeding stuff act was approved by the Governor on May 28th, 1907, and became operative August 1st. In this law there is a provision of great advantage to the miller in that it allows the sale in this State of by-products of wheat and rye, also pure grains ground together and unmixed meals made directly from the entire grains of wheat, rye, barley, oats, corn, buckwheat, etc., without any statement of analysis.

At the present time pure wheat and rye by-products sold within the State at any other place than at the mill where manufactured, shall have a tag or printed statement attached to each package containing the same, guaranteeing the contents to be pure wheat or rye bran or middlings, or a mixture of these articles, as the case may be; and also stating the number of net pounds contained therein, and the name and address of the manufacturer or importer.

There is a wide variation in the composition of wheat grown in different sections of the country and even from different varieties of wheat grown in the same section. The influence of climate, soil and variety are the chief factors which affect the composition of the wheat berry. As the composition of the bran and middlings from wheat depends upon the character of the wheat from which it is made, and also the method of milling, we find some variation in the percentages of valuable constituents. Nevertheless, a guarantee for protein and fat on these articles is not so essential, since their use in feeding rations is well established. A simple statement concerning the purity of these articles is all that the consumer desires to know. Not in the far distant past has the speaker detected the presence of rice hulls, ground corn cob, oat hulls and screenings in wheat bran, of such a proportion as not in any way to increase its value. The manufacturer or importer of or dealer in such an article cannot sell it now with a statement that the material is pure wheat bran, without conflicting with the law. He must, however, indicate upon the package the minimum percentages of crude protein and crude fat, the maximum percentage of crude fiber and the names of the several ingredients of which the contents of the package are composed. In other words, the name of any adulterant must be plainly printed upon the package or on a tag attached to the package. Every lot or parcel of mixed feed, other than mixtures of wheat and rye by-products and entire grains ground together, cannot be legally sold in this State unless the purchaser knows of what ingredients it is compounded. If any false statement concerning the composition is placed on the package it is malicious in the sight of the law and worthy of condemnation. "Mixed feeds" so-called, supposedly a mixture of wheat bran and middlings, but in reality wheat bran adulterated with ground corn cob, must in the future be sold for just what it is. The hull of the oat is the least desirable part of the seed, and any law which makes it illegal to adulterate corn meal with oat hulls, and sell the mixture to an unsuspecting purchaser, as corn and oats should be regarded as of great value in assisting to secure honesty in the feeding stuff trade.

Now then, what is the inevitable result of the enforcement of the present feeding stuff law? What advantage will you, as honest millers, derive from this legislation?

To my mind, there can be only one result. To-day one does not find "oat feeds" as plentiful on the market as a few years ago. They are now being sold in States where feeding stuff laws do not exist, and the money that formerly was spent for oat hulls is now going into your pockets. I trust that many feeds composed of inferior grains, screenings, weed seeds and rice hulls, sugar coated with molasses, will soon follow the oat feeds and be remembered as articles of inferior value rather than because of the good which they have done. The speaker has the same opinion of many of the so-called condimental stock and poultry foods on the market. The basis of these articles is some common feeding stuff like linseed meal, wheat bran, cottonseed meal or corn meal, to which are added such articles as charcoal, fenugreek, sulphur, saltpetre, salt, Epsom salts, iron oxide, gentian, etc., apparently for medicinal effect. The prices asked for such condimental preparations are far in excess of their commercial value. Undoubtedly some of these stock foods may prove beneficial when used under certain conditions, but those which are claimed to cure everything are evidently compounded by parties quite ignorant of the first principles of veterinary medicine. A well animal does not need them, and if it is sick the services of a skillful veterinarian should be secured rather than depend upon condimental foods as a source of relief.

In our present law the sale of condimental stock and poultry foods and patented, proprietary or trade-marked stock and poultry foods, possessing nutritive value combined with medicinal properties, is made subject to legal control. Great claims are made as to the nutritive value of many of these articles and, therefore, should be subject to the same examination which is given to other food materials. We believe that the time has come when the farmers, dairymen and poultrymen of this State should be defended against what has become one of the most serious impositions practiced upon them. Experiments have been carried on by scientists in this country and abroad, the results of which tend to substantiate the fact that no material benefit was derived from using condimental stock food in conjunction with the ordinary ration, and in many cases less net profit was realized when such condiments were used. It is to be hoped that as a result of this educational movement which has been instituted, the animal husbandman will soon realize that he is being deceived in the purchase of condimental preparations, for he is not receiving value equivalent to the money expended.

I believe that in the future instead of sending money outside the State limits and into the far West, in many cases, for cheap goods of uncertain composition and for proprietary articles of great price, the farmers will depend upon you to furnish a large part of the feeding stuffs consumed. I recognize, however, that the by-products of the oil press, breweries and starch and glucose manufactories, are of great value as foods for domestic animals, but these are in a class by themselves. The manufacturer of and the dealer in pure feeds, if he lets it be known, is sure to attain the greatest success in his business.

This law is on our statute books, it is to be enforced and should be complied with. We, who are to enforce it, do not expect any one to perform an impossibility. Any dishonest act in the feed business will eventually recoil upon him who commits it. The Feeding Stuffs Law puts no interference in the way of legitimate trade, and the Department of Agriculture is anxious to promote the best interests of all honest parties. New conditions in the feed business are continually arising which demand legal control and immediate action by those in charge of the enforcement of the law. The condition of the feed market at the present time as compared with what it was a few years ago is sufficient testimony of its value to the farmers of the Commonwealth. Were it not for such a law on our statute books, adulteration of commercial feeding stuffs would become more common, and the State of Pennsylvania would become the dumping ground of worthless or inferior materials that the manufacturers could not sell in the neighboring States where feeding stuff laws exist.

In conclusion, we invite your intelligent co-operation in the important work which we are doing in trying to protect your interests, for we have faith to believe that you will be materially benefitted in the end. You will find that there will be no limit to the extension of your business, no limit to the structure that may be builded upon a foundation of honesty, integrity and uprightness.

THE PENNSYLVANIA FEEDING STUFF LAW.

(No. 211, P. & L., Page 273.)

AN ACT

Regulating the sale of wheat-, rye-, corn- and buckwheat-bran and middlings, or any mixture thereof; also of condimental stock and poultry-food, and patented, proprietary, or trade-marked stock and poultry-food, possessing nutritive value combined with medicinal properties, and mixed feeds, including mixtures bearing distinctive names, used for feeding poultry and other domestic animals; and also of concentrated commercial feeding-stuffs; defining concentrated commercial feeding-stuffs; prohibiting their adulteration; providing for the collection of samples, and analysis thereof, by the Department of Agriculture, and the publication of information concerning the same; providing also for the expenses of the enforcement of the law, and fixing penalties for its violation.

Section 1. Be it enacted, &c., That every lot or parcel of corn, or buckwheat-bran or middlings, or any mixture of two or more of these articles, used for feeding domestic animals, sold, offered, or exposed for sale within the State, at any other place than at the mill where manufactured; and that every lot or parcel of concentrated commercial feeding-stuff, as defined in section two of this act, used for feeding domestic animals, including condimental stock and poultry-food, and patented, proprietary or trade-marked stock and poultry-food, possessing nutritive value combined with medicinal properties; and every lot or parcel of mixed feed, including mixtures bearing distinctive names, used for feeding poultry and other domestic animals, sold, offered, or exposed for sale within this State, shall have affixed thereto, in a conspicuous place on the outside thereof, a legible and plainly-printed statement, clearly and truly certifying the number of net pounds of feeding stuff contained therein, the name, brand or trade-mark under which the article is sold; the name and address of the manufacturer or importer, and a statement of the minimum percentage of crude protein and crude fat and the maximum percentage of crude fiber which it contains; these constituents to be determined by the methods adopted by the Association of Official Agricultural Chemists of the United States; and shall also have affixed thereto, in a conspicuous place on the outside thereof, a plainly-printed statement, truly certifying the names of the several ingredients of which the article is composed. Wheat-bran or wheat-middlings, rye-bran or rye-middlings, or any mixture of wheat-bran and wheat-middlings, or rye-bran or rye-middlings, used for feeding domestic animals, sold, offered, or exposed for sale within this State, at any other place than at the mill where manufactured, shall

Corn or buckwheat-bran or middlings.

Sold at other place than mill.

Commercial feeding-stuff.

Patented or trade-marked poultry-food, etc.

Statement.

Contents.

Statement as to constituents.

Wheat-bran or middlings, and rye-bran or middlings.

Statement.
When for sale in bulk.
Statement card.
Proviso.
Analysis.
Fee.

have a tag or printed statement attached to each package containing the same, guaranteeing the contents of the package to be pure and unadulterated wheat-bran or wheat-middlings, or rye-bran or rye-middlings, or a mixture of two or more of such articles; and also stating the number of net pounds contained therein, the name and address of the manufacturer or importer, and the names of the several ingredients of which the contents of the package are composed. Whenever any wheat-, rye-, corn- or buckwheat-bran or middlings, or any mixture of two or more of these articles, is kept for sale in bulk, at any other place in this State than at the mill where manufactured, or whenever any concentrated commercial feeding-stuff is kept for sale in bulk, stored in bins or otherwise, the dealer or dealers keeping the same for sale shall keep on hand cards of proper size upon which the foregoing statement or statements is or are plainly printed, and if the feeding-stuff is sold at retail, in bulk, or if it is put up in packages belonging to the purchaser, the dealer or dealers shall, upon request of the purchaser, furnish him with one of said cards upon which is or are printed the statement or statements described in this section: Provided, That when any manufacturer or purchaser, located within the State of Pennsylvania, of any bran or middlings, or mixture thereof, or of any concentrated commercial feeding-stuff, as defined in section two of this act, shall send samples of the same to the Secretary of Agriculture for analysis, the Chemist of the Department shall furnish such analysis, showing the percentage of crude protein, fat and fibre which it contains, and shall charge a fee of one dollar for each such sample, which analysis shall be made within ten days after the sample is received by the Chemist, and all moneys so received shall, from time to time, be covered into the State Treasury.

Concentrated commercial feeding-stuff defined.

Section 2. The term "concentrated commercial feeding-stuff," as used in this act, shall include cottonseed meals, cottonseed feeds, linseed meals, gluten meals, gluten feeds, pea meals, bean meals, peanut meals, cocoanut meals, maize feeds, starch feeds, sugar feeds, dried distillers' grains, dried brewers' grains, malt sprouts, hominy feeds, cerealine feeds, rice meals, dried beet refuse, oat feeds, corn and oat feeds, ground beef or fish scraps, and other animal and vegetable by-products, mixed feeds, other than mixtures of wheat-bran and wheat-middlings and rye-bran and rye-middlings, including mixtures bearing distinctive names, and all other materials of a similar nature used for feeding domestic animals, including poultry, also condimental stock and poultry foods, and patented, proprietary, or trade-marked stock and poultry foods, possessing nutritive value combined with medicinal properties; but shall not include wheat-bran or wheat-middlings, rye-bran or rye-middlings, or any mixture of two or more of these articles; hays, straws, and corn stover, pure grains ground together; nor the unmixed meals made directly from the entire grains of wheat, rye, barley, oats, Indian corn, buckwheat, broom-corn, flaxseed, sugar-cane and sorghum, when all the different parts of such grains remain together and have not been separated, after grinding, by bolt, sieve, or other-wise.

Minerals and injurious substances.

Proviso.

Section 3. No foreign mineral substance, or substance injurious to the health of domestic animals, shall be mixed with any feeding-stuff sold, offered or exposed for sale in this State: Provided, That nothing in this section shall be construed as prohibiting the use of mineral substances known to possess medicinal properties, and that are not injurious to the health of domestic animals, in compounding condimental stock and poultry foods and patented, proprietary, or trade-marked stock and poultry foods.

Copy of statement shall be filed.

Section 4. Each and every manufacturer, importer, agent, or person selling, offering, or exposing for sale any corn- or buckwheat-bran or middlings, or any mixture of two or more of these articles, at any other place in this State than at the mill where manufactured, or any concentrated commercial feeding-stuff, as defined in section two of this act, shall, upon request, file in the office of the Secretary of Agriculture a certified copy of the statement or statements named in section one of this act.

Unlawful sale, or exposing for sale.

Omission of statement.

False statement.

Fine.

Proviso.

Enforcement of act.

Section 5. Each and every manufacturer, importer, agent, or person, selling, offering, or exposing for sale any wheat-, rye-, corn-, or buckwheat-bran or middlings, or any mixture of two or more of these articles, at any other place in this State than at the mill where manufactured, or any concentrated commercial feeding-stuff, as defined in section two of this act, without the statement or statements required by section one of this act; or to which is affixed a statement or guarantee which is false in any particular, or in relation to which the provisions of all of the foregoing sections have not been fully complied with, shall, for every such offense, forfeit and pay the sum of one hundred dollars, which shall be recoverable, with costs, including the expenses of analysis, by any person suing in the name of the Commonwealth, as debts of like amount are by law recoverable: Provided, That the Secretary of Agriculture shall, together with his deputies, agents, and assistants, be charged with the enforcement of this act, and shall have free access to all places of business, mills, buildings, carriages, cars, vessels, and packages, of whatsoever kind, used in the manufacture, importation, or sale of any concentrated commercial feeding-stuff, or of any wheat-, rye-, corn- and buckwheat-bran and middlings, or mixtures thereof; and shall also have power and authority to open any package containing, or supposed to contain, any concentrated commercial feeding-stuff, or any wheat-, rye-, corn- or buckwheat-bran and middlings or mixtures thereof, and take therefrom samples for analysis, upon tendering the value of said samples; and the party or parties interested, or their representative, shall be given an opportunity to be present when said samples are taken. Said samples shall be thoroughly mixed and then divided into two samples, and put in glass vessels and carefully sealed, and a label placed upon each vessel stating the name or brand of the feeding-stuff or material sampled, the name of the manufacturer when possible, the name of the party from whose stock the sample was taken, and the time and the place of taking; said labels to be signed by the Secretary of Agriculture or his agent, and by the party or parties interested, or their representative, if present at the taking of the samples. One of said duplicate amples shall be retained by the Secretary of Agriculture or his agent, and the other shall be left with the party whose stock was sampled. The Secretary of Agriculture shall cause such of the samples, retained by himself or his agent, as may seem to him proper, to be analyzed within sixty days after said samples are received by the Chemist; and the result of the analysis of such samples, together with such additional information as circumstances advise, shall, by his authority, be published in reports or bulletins from time to time: Provided, That when the materials sampled are in packages, the samples shall be taken from four separate packages: And provided, further, That if the analysis of any sample does not differ from the guarantee more than ten per centum of the protein, fat or fiber guaranteed, the manufacturer shall be considered as having complied with the requirements of this act, except when the percentage of either protein or fiber shall exceed twenty per centum, in which case the variation allowed shall not exceed seven per centum of the guaranteed amount.

Powers and duties of Secretary of Agriculture and agents.

Taking and labeling of samples.

Retention of samples.

Analysis.

Publication.

Proviso.

Proviso.

Expenses under provisions of act.

Section 6. All necessary expenses under the provisions of this act shall, after approval in writing by the Governor and the Secretary of Agriculture, be paid by the State Treasurer, upon the warrant of the Auditor General, in the manner now provided by law: Provided, That not more than fifteen thousand dollars shall be expended in any one year, which amount, or so much thereof as may be necessary, is hereby specifically appropriated for said purpose; and all penalties and costs for the violation of the provisions of this act shall be paid to the Secretary of Agriculture or his agent, and by him immediately covered into the State Treasury. Appropriation.

Section 7. Every person who violates any of the provisions of this act shall also be deemed guilty of a misdemeanor, and, upon conviction thereof, shall be punished by a fine of not less than fifty dollars nor more than one hundred dollars for the first offense, and a fine of not less than one hundred dollars nor more than two hundred dollars for every subsequent offense: Provided, That all penalties, fines, and costs, including the expense of analysis, imposed and recovered under the provisions of this act, shall be covered into the State Treasury. Violations. Misdemeanor. Fine. Proviso.

Section 8. Magistrates and justices of the peace throughout this Commonwealth shall have jurisdiction to hear and determine actions arising from violations of the provisions of this act, and to hold for court, or impose the penalties prescribed therein, subject to appeal as the law shall direct. Jurisdiction of magistrates.

Section 9. This act shall take effect on the first day of August, one thousand nine hundred and seven. Act to take effect.

Section 10. All acts or parts of acts inconsistent with the provisions of this act are hereby repealed. Repeal.

Approved—The 28th day of May, A. D. 1907.

EDWIN S. STUART.